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Original Articles.

THEODORE TRONCHIN. 1709-1781. A SKETCH.*

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THE name of the great practitioner of medicine, like that of the great advocate in her sister profession, is written in water, unless he produces a book and thus wins attention during his life, or, perchance, appreciation after his death. Even if the book be indifferent or bad, the book it remains and is treasured as such in the cemetery of books, the library.

Theodore Tronchin, pupil of Boerhaave, honorary professor of medicine at Geneva, of enormous vogue there, and later in Paris, as a practitioner, is a case in point. His name is contained neither in the Encyclopedia Britannica nor in the Century Dictionary of Names. There was no "Who's Who" in those days. A sketch of his life, with extracts from his voluminous correspondence, has lately appeared,[1] and rescues from oblivion a man of strong character and broad intellect, who dared at a time when medical dogma and theory were still in the ascendant, and when disease was combated by bleeding, purging and puking, to exercise a rare common-sense, to inculcate right living and outdoor exercise, and to recognize in these the most potent means of the prevention and treatment of many maladies.

Personally, and by letter, he was called upon to advise those highest in rank and most eminent for talent or genius of the time. His success and heterodox ideas won him the ill-will of his professional contemporaries.

He was descended from Remy Tronchin, a captain of cavalry in the service of Henry IV, who became a Protestant and hence found it convenient to move to Geneva, where his descendants were prominent in civic life.

He was born in 1709. His father was a banker and gave him the best education which Geneva offered, intending him for the ministry. He was a good student, but nature sometimes has her way, and we read that "he was so very fond of dancing that he would walk several miles of an evening to go to balls without the knowledge of his parents." A serious illness, which nearly proved fatal, led him to take more serious views.

His father's fortune disappeared with the collapse of the Law boom, and the son went to England hoping to find advancement through the influence of Lord Bolingbroke, a distant relative. The statesman was, however, out of power, and in retirement at Dawley. Tronchin during his visit met both Swift and Pope, and by the advice of the latter passed at least a year at Cambridge, where he came into close relations with Bentley.

He then decided on medicine as a career and Boerhaave as his master. He passed several months in London, frequenting the hospitals, and met Richard Mead, then in the full tide of his career. One day he asked Mead the secret of his success. The reply sank deeply into his mind and was often quoted by him as having profoundly influenced his practice: "I have not done much good, but I have tried not to do harm."

In September, 1728, we find him in Leyden, where he lodged with s'Gravesande, professor of mathematics, and was the bearer of a letter from Bentley to Burmann. Naturally supposing this to be a letter of introduction, he delivered it in person. After reading it, Burmann's manner and conduct were such that Tronchin fled from the house and hastened home to s'Gravesande, whom he informed that Burmann was bereft of reason. s'Gravesande hurried to his friend, who showed him Bentley's letter, which contained only abuse of Burmann for the reason that the latter had not only differed from, but even criticised, Bentley's views on the fables of Phædrus.

He assiduously devoted himself to Boerhaave's teaching and soon attracted his attention, perhaps from the fact that his hair was thick and long. A remark of Boerhaave's that the care of such an ornament must take time was repeated to Tronchin, who forthwith sacrificed his locks.

After two years in Leyden, when scarcely twenty-one, he graduated in medicine, having completed three years of professional study, and had the precious privilege of close association with an unusual number of remarkable men of varied interests and international reputation. Residence away from home during an impressionable period of his life, combined with the above association, broadened, at least, a character congenitally strong. For, as we have seen, he came of stock early exiled by religious convictions. He settled at Amsterdam, then visited by some virulent epidemic, in accordance with the advice of Boerhaave. His youth and foreign birth were obstacles to success, and he seriously thought of returning to England. Boerhaave, as well as Van Swieten, however, gave him encouragement and support, the former even referring Amsterdam patients who proposed to consult him to the young man, with the statement, "You can consult me without leaving Amsterdam in consulting him."

In 1738 Boerhaave died, in his last years, it is said, having wished to get Tronchin back to Leyden to assist him in his university work. By this time Tronchin was firmly established at Amsterdam and was known even outside of Holland, Senac and Quesnay writing from Paris, the former to ask how to treat whooping cough, the latter to invite criticism of a forthcoming book.

In 1740 he marries Hélène de Witt, a descendant of the great De Witt. She does not seem to have had beauty, but he says of her, "My wife is not merely adorned with virtues; she is covered with them."

The decadence which came upon Holland under William IV of Nassau led him, in 1753, to send his two sons to Geneva to school. "For three reasons," he writes, "I send them away. The first is my dread of the effect of certain religious principles on boys of their age. The second, and corollary of the first, is the evil state of morals. How can these live without principle behind them! The third reason is, that unhappily both morals and manners are so lacking."

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*Presented at the annual meeting of the Association of American Physicians at Washington, D. C., Wednesday, May 13, 1908.

[1] Theodore Tronchin, par Henry Tronchin. Paris and Geneva, 1906.

He was offered the place of physician-in-chief to the infant stadtholder, William V, but declined, and in 1754 quietly departed with his wife and daughter for Switzerland after a residence of nearly twenty-five years in Amsterdam. He received overtures from the regent to return, and also declined an offer from the Empress of Russia to go thither upon his own terms. At Geneva professional pettiness and jealousy threw every obstacle in his way, trying to render his appointment as professor purely honorary, by at first refusing him a place to meet students; but the faculty was beaten, and Tronchin taught sometimes in Latin, sometimes in French, until his final move to Paris.

We have no reason to believe that as a teacher of students he was pre-eminent. He was too sensible a man to ally himself to any existing school of thought in medicine, nor did he found a school himself.

After an exceptionally broad and thorough professional education, which brings him into close contact with eminent men, and after an experience of twenty-five years of practice in which his guiding principle — true follower of Hippocrates that he was — ever was to study nature, to learn from and be guided by her rather than to combat her, he becomes, perhaps, the leading practitioner of Europe, consulted personally and by letter from far and near. In the Latin preface which he wrote for the edition of Baillou's works, we find, "[Doctors] blinded by their petty disputes, have preferred to lay down laws to nature rather than to search out her own." . . . "A painstaking study of nature is the only foundation on which one can build a system of medicine which will endure. The dogmatism of hypothesis and theory have made medicine the scourge of the human race."

In a letter he says, "The physician walks safely only arm in arm with nature. If he loses sight of her he goes astray, and beneficent nature, held in so slight esteem, is usually all-sufficient, for God, whose work she is, has not been pleased to limit her with the power of keeping the body well, but has added that of restoring it when diseased. The wise physician contents himself with removing obstacles. He restrains nature when she is too active; he stimulates her when she nods; but it is nature alone which cures."

We moderns see and bewail some evidences of the commercial spirit here and there among us. In 1757 Tronchin writes Senac, physician of Louis XV, "Since our art has degenerated into the shameful pursuit of gain, physicians, as a rule, are simply financiers, and so sacrifice their duty to their wants. It is useless to look for delicacy and principle in those who have only wants. The noblest of arts has become the most contemptible and accursed." We see that sometimes the fire burned hotly within him, and then he spake with his tongue. He writes Dr. Rast, who had, apparently, classed him as a Methodist, "I am no adherent of this or that sect; I will live and die in freedom, following nature step by step, profiting as far as I can by the mistakes of those who do not know or despise her. I thank heaven that I am no sectarian."

Grimm says of him: "Never has a physician been closer student of nature, or seized with greater sagacity her tendencies and hints."

Tronchin himself writes: "The first requisite in a physician is that he be an honorable man. Science comes next. He should be freely credited with all the harm which he refrains from doing. If sometimes he is blamed for sins of omission these are swamped by those of commission, of which the horde of self-styled healers is daily guilty." Remember that this was written a century and a half ago.

The following also has a closer application to those than to present times. "The patient, intolerant of his state, persuades himself that evacuants are the means to health. Timidity and the clamor of the patient often induce the doctor to act contrary to experience and theory. He bleeds, he purges, he pukes. The sickness gets worse. The sick man loses his head and knows not on which saint to call for health." Tronchin bled, but he bled with brains, not as a routinist.

He writes a patient: "I recall a lady of one of the first cities of France, in an even worse plight than you, who consulted me six years ago with regard to her eight hundred and thirty-third bleeding, which could not be effected in spite of the doctor's orders, because the blood would not flow. The doctor still deemed it necessary. But how let blood if there be none? He proposed to wait a week. 'Between now and then,' said he, 'perhaps' you will make some.' During the expectant period she consulted me." The inference from what follows is that these eight hundred odd bleedings all fell within one year. This seems incredible to us. "A hungry wretch who steals a loaf is hung," is his comment on this case.

Marteau's statement, in 1756, that bleeding killed 4,000 people a year in Paris, 40,000 in France, was condemned by the faculty.

As regards drugs, Tronchin says, "The number of specifics grows less as wisdom increases." He was no lover of the "shotgun" prescription, but gave simple remedies, ofttimes placebos. It is related that a count who traveled far to Geneva for advice compared his prescription with that of several other patients, and all alike called for soap.

His belief in right living, and his shrewdness in promoting it, even in court society during the regency, is shown by his insistence that his pills be taken daily: one at 7 A.M. on rising, a second at 5 after a light meal, a third at 9 after going to bed. These were bread pills!

His biographer says:[2] "The real novelty of Tronchin's treatment is, in short, hygiene, at that time quite neglected. Many practices which to-day seem to us a matter of course, a number of truths which to us are axioms, were then unknown. It is to Tronchin's credit that he brought them to notice and made them adopted, at a time when the mode of life had become more and more artificial, and when the errors of dogmatic medicine took precedence of the demands of nature."

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[2] Page 48.

He repeatedly writes: "Lead a more active life, all sorts of exercise are good for you, but remember that over-fatigue is injurious. One is not born an athlete, though training may make one such."

The saddle is a favorite prescription. He advises an abbé to saw wood, an abbess to make her bed and polish her wood floor, with footwear adapted to the purpose, if she can't get exercise outdoors. "I have often cured cases thought to be beyond help, in their own rooms." He advises fencing and gymnastics. He cites the anatomical relation of veins and muscles as an argument for exercise. Evidence of his influence is seen in that the fashionable women who followed his counsels, taking a morning walk with cane and in short skirts, were called "tronchines," and the verb "tronchiner" was coined.

The temptation is great to quote too freely from the letters of this great hygienist. In the main his principles are those universally held today. It is not so much his principles as the fact that he held them one hundred and fifty years ago and had such success in making them effective which interests us.

He condemns bed-curtains and the upholstery of bedrooms, the exclusion of fresh air, nightcaps and heavy perukes and wigs, rich food and late hours. He urges pregnant women to walk abroad, mothers to nurse their children and applies the same supreme common sense to the management of babies that he does to other matters.

It seems quite possible that Rousseau derived from Tronchin many of the principles of the simple life which he preached with such power and effect, especially in "Emile" with regard to the education of children. Tronchin's attitude as to these matters was well known, and he doubtless revealed it in the intercourse which it is known he had with Rousseau. But the latter allowed his logic and rhetoric to carry him to lengths in the hardening process of children which the good sense of Tronchin, never an extremist, would not endorse. The relation between these two men — the one a brilliant egotist, always ill-balanced, and becoming the victim of the mania of persecution, the preacher of morals, who handed over his own children to foundling asylums; the other a doer of the word, of high religious principle, patriotic, of unusual balance and clearness of vision, consistent throughout — relations between such could not indefinitely continue intimate and friendly.

Rousseau's jealous nature could not reconcile itself to the esteem inspired in Mme. d'Epinay, Grimm and Diderot by Tronchin, who was, moreover, the trusted physician of Voltaire.

Tronchin secured for Rousseau the offer of the position of librarian at Geneva, but the latter refused, doubtless partly for the reason that he was unwilling to live so near Voltaire and suffer an eclipse, to be noted by all.

The words "psychosis" and "neurasthenia" had not been coined in Tronchin's day, but that which they represent was common enough, and among fashionable women was called "vapors." To a lady who details her sensations by letter he writes: "Your imagination, madame, frightens me more than your ailments. It is ready to make you the victim of those who prey upon it. You have been victimized so often, and will be again, that from the bottom of my heart I am sorry for you, and this is perhaps all the service I can render you. Most of the ills you have taken the trouble to recount to me, and which pity has constrained me to read from end to end, are factitious, unreal; the number of these actual or possible ills is almost limitless. They result from the bodily and mental weakness of those afflicted, the multiplication of bad remedies, the ignorance and rascality of those who give them. Disease is thus manufactured on a larger scale than anything else in Europe."

As few physicians of his time Tronchin understood and rationally availed himself of, for the benefit of his patients, the action of mind on body and body on mind. Voltaire says of him, "He knows human nature; he is a great physician." Grimm speaks in much the same terms.

He writes Mme. de la Popelinière: "It is not our fault if our art has limits. These are inherent in the nature of things; but we are wrong, very wrong, if we shut our eyes to these limitations or fear to acknowledge their existence to our patients." Yet this is the man whose success in Paris and whose revolutionary common-sense methods led to caricature and abuse. He was called charlatan and pirate. In a burlesque poem in three cantos, Tronchinades, a deputation of the Paris faculty, visits and bids the Genevan begone, for they had no fees since he came. "The Paris physicians justly reproach me with having seen too many patients," Tronchin says. "Had I had my own way, I should have seen fewer. No one realizes more keenly than I that too large a practice is criminal." "*On ne voit pas de maladies quand on voit trop de malades.*"

It would not be fair to convey the impression that Tronchin had only detractors among the profession of Paris, and it must be confessed that his language was not always as reserved as it might been have wise or even just. His condemnation of the prevalent mode of treatment sometimes included those who merely carried out the ideas of their time. He was a member of the College of Physicians of Montpellier and of the Academy of Surgery of Paris; foreign associate of the academies of Science of Berlin, Paris, Edinburgh, Stockholm and St. Petersburg, and member of the Royal Society of London.

He was criticised for having written nothing, and partly for this reason, apparently, partly to show his esteem for the Duke of Orleans, published in Geneva in 1757, a monograph on "Colica Pictonum," written in Latin and dedicated to the duke. This production was scarcely worthy of him, in the main a compilation in which he did not exercise the critical acumen which he did in dealing with patients. It was savagely attacked by Bouvart and others. Bouvart's pen was sharpened by his antagonism to inoculation, Tronchin's connection with which next claims our attention.

How Lady Mary Wortley Montagu had her son inoculated at Constantinople in 1718, her daughter in London in 1720, and how the practice was soon after adopted in Engand, is a many times told tale. Opposition there was plenty, as well from the doctors as the clergy. The Bishop of St. Andrews declared in the pulpit that it was tempting God to ingraft a disease, and his ingenious diagnosis of Job's parlous state was inoculation for smallpox done by the devil himself. Dr. Zabdiel Boylston inoculated his son in Boston in 1721 "with prayer and fasting." But the Continent would have none of it.

Tronchin, in 1748, while still in Amsterdam, and president of the College of Physicians there, was led to inoculate his older son by the narrow escape of the younger brother from dying of the natural disease. He then inoculated 9 other persons, and some four years later, when the disease was rife in the city, others; and the leading people soon came to regard inoculation with favor. During a visit to Geneva in 1749 he inoculated first his nephew and then some relatives and friends. Thence the practice spread into other parts of Switzerland. He insisted on the importance of a good state of general health as a pre-requisite to inoculation. He sent his patients to the country, made them exercise and eat moderately. "Inoculation demands greater precaution in Europe than in the East, where a simple life is the rule." he says. He inoculated on the leg, through incision in adults, small blisters in young children. Thanks to his rigid and far-sighted precautions, his success was unbroken.

There can be no question that the influence of Voltaire, who settled in Délices in 1755 just as Tronchin returned to his native city, greatly helped the cause. He wrote Richelieu in May, 1755, "Thirty people are to be inoculated this month in Geneva. The practice has the same following and success as in England. The turn of the French comes late, but it will come."

In 1755, the Chevalier de Chastellux was successfully inoculated at Paris. It was he who, as the Marquis de Chastellux, came to this country, fought in our Revolutionary War and published his well-known volumes of travel.

The death of Mlle. de Châtelain after inoculation put an end to the practice. Soon after, however, the Duke of Orleans decided to have his two children inoculated, and to intrust the operation to Tronchin, who, without confiding in any one either his destination or errand, started for Paris, Feb. 12, 1756. In spite of all sorts of pressure against the experiment, the Duke stood firm, and March 25, Louis Philippe, later to be called Egalité, and still later guillotined, and his sister, were inoculated at the Palais Royal, which was quarantined for three weeks. When it became known that the children were well there was great enthusiasm, and the curiosity to see Tronchin may be imagined. The street that he lived in was almost impassable for carriages, and he was the chief subject of interest and talk in Paris.

After a stay of about four months he returned to Geneva, toward which patients now streamed from every direction to seek advice or be inoculated. The practice made no headway in France, however, for twenty odd years, though it was cussed and discussed and led to such stormy scenes in the faculty that Parliament was forced to intervene. D'Alembert says that the sessions of the faculty came so near to being bloody as to warrant calling surgery to the aid of medicine.

In 1759, Tronchin was called to Parma to inoculate the only son of the reigning duke, whose wife, daughter of Louis XV, and whose daughters also had, at an interval of four years, died at smallpox, one at Paris, the other at Vienna. The operation was a perfect success. Eight months later, the duke who had thus protected his son, succumbed to the disease, as did Louis XV in 1774.

Two months after Tronchin's return to Geneva to live, Voltaire, banished from France, driven from Prussia, after a year of wandering, settled at Délices, later removing to Ferney. The two men had, years before, corresponded, perhaps met. In 1739 Tronchin writes to his friend, the Chevalier de Jaucourt, "It is mortifying to reflect that Voltaire is a scamp, rattle-brained, a man devoid of both judgment and conduct." Within a year after Voltaire's arrival near Geneva Tronchin writes again: "What can one expect of a man who is always in contradiction with himself, whose heart has always been the dupe of his intellect? His moral side from earliest infancy has been so abnormal and twisted that he is an artificial being, unlike any other. Of all men the one whom he knows least is himself." The relation between the two became pretty close. Tronchin never approved of Voltaire and seems to have understood him thoroughly. His position and influence in Geneva, and the favor in which he was held at the Court of France, were no mean additions to his professional skill, as Voltaire clearly saw. The poet laid siege to the physician, generally addressing him as "Mon Aesculape," or even "Aesculape-Apollon."

Tronchin was no friend of either tea or coffee, which latter Voltaire took to excess. The most that Tronchin could do was to limit him to three cups a day of a mixture of coffee and chocolate! No sooner is Voltaire at Délices than he writes to his banker in Lyons, Robert Tronchin, cousin of the doctor, to send him a rhubarb root big enough to purge a province. He finds, however, that Aesculapius prefers cassia and then writes for 20 lb. of it as a winter supply. He is solicitous for the health of his Paris sister, Mme. de Fontaine, and suggests, "Can't you give her equal parts of cassia, manna and oil to soften, sweeten and clean the dry guts of the niece as you have those of the uncle?"

The mutual relations and the correspondence of these two remarkable men throw much light on the characters of both. No brief abstract can do justice.

After the death of Louis XV, Voltaire returned to Paris and was very anxious lest Tronchin should refuse to take charge of his health. He could not quite bring himself to follow Tronchin's good advice to return to Ferney and a quiet life. Tronchin took care of him in his last illness, and writes Bonnet of the unedifying end as follows: "Had my principles become slack and needed a firm bond, the man whom I have seen waste away, and whose death agony I have watched, would have furnished a very Gordian knot; and the contrast between the death of a good man, the close of a fine day, with that of Voltaire, is that between a beautiful day and a tempest, between the serenity of soul of the sage, who merely ceases to live, and the frightful torments of him for whom death is the King of Terrors."

In 1762 Tronchin declined the appointment of physician-in-chief to the Duke of Orleans, but three years later accepted, and betook himself permanently to Paris, making only infrequent visits to Geneva thereafter. He was lodged at the Palais Royal, provided with a cook and three lackeys, a carriage and two pair of fine black horses. He says that his purpose in changing his abode was to moderate his work and limit his enormous correspondence, for we must remember that he advised many patients only by letter on a statement of their physician, without seeing or examining them himself. This was more feasible at that day, when diagnosis rested on symptoms rather than on signs, and there were no instruments of precision. He was doubtless weary of the civic and religious strife then rampant in Geneva, from which he could not keep entirely clear.

Professional jealousy was again awakened in Paris on his return, though the surgeons welcomed him.

A prominent ecclesiastic who consulted him for intractable facial neuralgia submitted to double nerve section under his supervision with brilliant success.

He used suspension for the nine-year-old Duc de Chartres for a curvature of the spine, and inveighed against the heavy and brutal mechanical appliances of the time.

The Dauphin of France, son of Louis XV, and father of Louis XVI, died of consumption. Soon after it was found that his wife was also a victim of the disease, doubtless contracted from devotion to her sick husband. The king, much to the disgust of the court physicians, had Tronchin called in consultation January, 1767. As soon as he entered, struck by the foulness of the air, he exclaimed: "The princess is poisoned," and ordered the windows opened. It was the custom at Versailles to shut tight all windows Nov. 1 — All Saints' Day — and keep them so until Easter. This exclamation was twisted in meaning to imply an accusation that the Dauphiness, as gossip said had been the fate of her husband and of Mme. de Pompadour, was being disposed of by the Duc de Choiseul, and won for Tronchin the undying and implacable hatred of that statesman. For this Tronchin bore no malice, and even publicly showed his esteem for the fallen Choiseul when he went into exile. Tronchin took full charge of the princess, giving her fresh air, feeding her generously, sending her out on foot and to drive. The fever subsided, and for a time she improved, but a copious hemoptysis occurred, and she failed and died March 13, 1767.

The faculty took advantage of the revolutionary treatment and every feature of the case to discredit Tronchin, but without success, save to cause him trouble. He retained the confidence of the king, and of his friends and patients.

To Dr. C. G. Cumston I owe a reference to Tronchin in Casanova's Memoirs. "I have been assured, though I have difficulty in believing, that he [Tronchin] cured a phthisical subject of a secret disease by means of the milk of an ass, which he had submitted to thirty massive mercurial frictions administered by four strong porters."[3]

In his last years he devoted two hours daily to poor patients, giving them the money to buy their remedies. He died at the Palais Royal as he had lived, with dignity and calm, large numbers of the poor following his bier to the grave.

It is impossible in a sketch like this to do justice to its subject. But I trust I may have succeeded in stimulating some of you to read his life in detail. He doubtless had faults — what of that? It profits not to seek or dwell upon them. It is uplifting as well as interesting to study the career of a high-principled, thoroughly trained physician, who, far in advance of most physicians of his time, followed the dictates of common sense in therapeutics, who worked with rather than combated nature, and to give him a tardy recognition which was accorded by the laity but denied him by the profession of his time. He made no discoveries, but rendered enormous service to a great number of people. His patients became his friends. His life was consistent throughout. He was one of the greatest practitioners of medicine the world has seen. This may be a strong statement, but I believe it to be true. We can all profit by his example, thanking God that we live at a time when all true physicians are humble followers and students of nature, when the impassioned advocates of theory and hypothesis have gone to their long rest and when Medicine is coming to her Kingdom.

AN UNUSUALLY EXTENSIVE MILK-BORNE OUTBREAK OF TYPHOID FEVER.

BY CHARLES HARRINGTON, M.D.,
Professor of Hygiene, Harvard Medical School; Secretary of the State Board of Health of Massachusetts.

On March 31, 1908, after several months of practical freedom from typhoid fever, a case of that disease occurred in Jamaica Plain, followed, on April 1, by two more, on April 2 by one, and on April 3 by two. On April 4 inquiry was made as to the possibility of a common cause, and it was learned that many more cases were being reported. The number reported for that day proved to be 17. On Monday, April 6, the number reported was 73 (which number includes the cases of two days, there being no mail delivery on Sunday), and during the next five days the numbers reported were, respectively, 54, 38, 26, 25 and 17. From Monday, April 13, to Saturday, April 18, inclusive, the numbers reported were, respectively, 32 (Sunday and Monday), 7, 17, 5, 13 and 5. During the next week the numbers were, respectively, 12 (Sunday and Monday), 4, 2, 4, 10 and 4. Between Monday, April 27, and May 15 the total number of cases reported was 30, a majority of which (18) were undoubtedly contact cases. There were thus reported during this period of about six weeks no fewer than 410 cases of typhoid fever, in which total are not included the cases of two persons who came into

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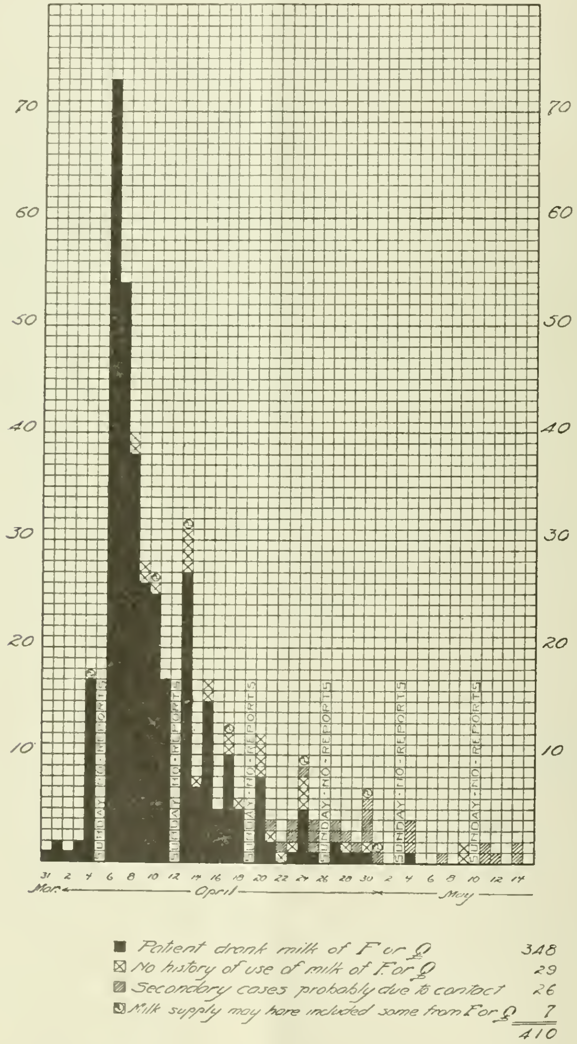
[3] Vol. iv, p. 455.



the district already ill, and a number which in the excitement naturally caused were wrongly diagnosed as typhoid.

So sudden an explosion, occurring in a district hitherto practically free from the disease, suggested before it had reached its height the probability of a common milk supply. It was learned on April 5 that 23 of the 24 cases already reported were on the routes of two milkmen. The 73 cases reported on April 6, the 54 reported on April 7, all but 6 of the rest of the cases reported during that week, and all but 12 of the cases reported during the second week were also on the same milk routes.

Of the 410 cases reported, 348 primary and 23 secondary cases proved to be in families supplied by these two men, who hereafter will be designated as F and Q. Since the number of cases occurring on each route was about the same (primary, 175 and 173; secondary, 6 and 17, respectively), and for reasons which will presently appear, the two supplies are presented as one in the accompanying chart, which illustrates the characteristically explosive nature of a milk-borne outbreak. There were 29 cases in which no history of the use of their milk could be obtained, and 7 in which there was a possibility that the victims had on some one or another day drunk it. These 36 persons were among the regular customers of no fewer than 15 different milkmen. More than half of them were adults who, going about freely and perhaps lunching and dining in restaurants and in the homes of their friends, may have consumed some of the same milk, or may have ingested the infection with some other article of food; and all but 3 of the remainder were children of school age, who also doubtless visited about to some extent.

Age periods. — The persons seized in this outbreak were distributed according to age as follows:

1 to 5 years,	77
6 ,, 10 ,,	75
11 ,, 15 ,,	49
16 ,, 20 ,,	42
21 ,, 25 ,,	44
26 ,, 30 ,,	34
31 ,, 35 ,,	24
36 ,, 40 ,,	25
41 ,, 45 ,,	15
46 ,, 50 ,,	9
Above 50 years,	13
Age not stated,	3
	410

Number of households invaded. — The 410 cases were distributed as follows:

Single cases in 216 households, divided as to milk supply as follows:

F,	97
Q,	86
All other milkmen,	33 (including 1 contact)
	216

In 79 households multiple cases occurred as follows:

		Total.	Contacts.
2 cases,	57 households,	114	12
3 ,,	12 ,,	36	7
4 ,,	7 ,,	28	5
5 ,,	2 ,,	10	1
6 ,,	1 ,,	6	
	79	194	25

Of the total number of contact cases (25), 23 occurred in households supplied by F and Q.

The milk supply of F and Q. — In common with eight other milkmen, Messrs. F and Q obtained their supply from the car of a contractor, who derived this particular carload from eight towns, in none of which had a case of typhoid fever occurred during the previous three months, excepting that of an Italian laborer in no way connected with milk production. Each milkman who went to this car received milk from the same dairies regularly, and the fact that there was but one dairy whose product was given to both F and Q was naturally suggestive that the infective material came to Jamaica Plain from this particular dairy. Inquiry at the place of production revealed that not only was there no history there of any sickness whatever, but also the interesting fact that the owner was marketing about sixty cans a day, only forty of which were sent to Jamaica Plain, twenty being sold daily to a dealer in another place, where there had been but one case of typhoid fever, and that one not on his route. It was evident, therefore, that the infection did not come from the premises of this producer.

Among the first victims of the disease to be reported was the milkman F himself (April 4). It appears that on or about March 20, F consulted his family physician, who concluded that F was merely tired and overworked. From that time until April 2 F felt ill, but was able to attend to his daily work, which included the general handling of his milk. On April 1 he consulted his physician again, and at that time his temperature was 100°, and he was suffering with diarrhea. On April 2 a diagnosis of typhoid fever was made, and he took to his bed. On April 10 he died, and the autopsy performed by Dr. George B. Magrath revealed, among other lesions, an ulcer, 1.5 by 2 cm., at a point about 60 cm. below the ileocecal valve, which ulcer, being of not less than three weeks' development, indicates that F must have been suffering from typhoid fever as early as March 20. Other lesions observed in the intestines, numerous ulcers of varying size, were of more recent origin, and represented, according to Dr. Magrath, the conditions found toward the end of the second week.

Considering that F had been ailing for a period of about two weeks before he took to his bed, but not to such an extent as to prevent him from handling the milk, it is not difficult to surmise in what manner the supply became contaminated with the exciting cause of the disease, for the hands of the average milkman do not receive the same degree of care as those of an operating surgeon, and with more or less frequent occasion for interrupting the work of handling the milk in order to respond to natural calls, specific contamination, first of the fingers and then of the milk, is very likely to occur. With the supply of Q, however, the connection is by no means clear. It was reported that Q received from the dairy which they had in common only those cans which F left for him after tasting all and selecting those which he wished for his own trade. This, however, is denied on apparently good authority, and, instead, it is said that on only two occasions, namely, March 15 and March 18, did F precede Q at the car. It is further stated that although each can was tasted before acceptance, those that were rejected were set aside and were not delivered to Q. However this may be, and whether or not F had an opportunity to infect the milk of Q on either of these two days or on those subsequent days, it is certain that there was the greatest possibility of an interchange of cans between F and Q, for it was the custom of each to return the cans to the car washed, but by no means sterilized; and after they were filled at the dairy and returned, Q was as likely as F to receive cans which had been supplied to and handled and returned by F. Certain it is that the first infection did not occur at the place of production and was not due to the fault of the farmer; and equally certain is it that F, during two weeks of ambulant typhoid fever, had ample opportunity to infect his supply and to reinfect it again and again, and to spread the infection to Q's supply through the non-sterilized cans of the contractor which they used in common.

A GLOMERULAR LESION OF EXPERIMENTAL NEPHRITIS.*

BY HENRY A. CHRISTIAN, M.D., BOSTON,

Assistant Professor of the Theory and Practice of Physic, Harvard University: Physician-in-Chief, the Carney Hospital.

(*From the Laboratory of the Department of the Theory and Practice of Physic, Harvard University.*)

During the past few years experimental nephritis has been extensively studied,[1] and the lesions produced by a variety of substances have been investigated histologically. Uranium nitrate has been the substance which has proved most useful in these experimental studies, since, as pointed out by Richter,[2] it produces renal lesions which simulate human nephritis much more closely than do those produced by the other toxic substances, in that edema is a common accompaniment of the uranium nitrate lesions.

Schlayer, Hedinger [3] and Takayasu,[4] have investigated in rabbits the functional relations of the kidneys to stimuli of various kinds and have compared the reactions obtained in normal animals with those in animals whose kidneys have been damaged by doses of various toxic substances. Histological examinations of the kidneys have been made, and in particular the glomeruli have been studied by Takayasu,[5] since it had early been thought that there was a close relation between glomerular lesions, albuminuria and edema. Takayasu failed to find any very marked glomerular lesions in that group of nephritides which Schlayer and Hedinger had termed tubular nephritis, and which they had produced by potassium bichromate, mercuric chloride and uranium nitrate. Though lesions were found in the glomeruli, these were not of marked degree and were inconstant in their relations to the degree of injury, as shown by the urinary excretion and the functional reactions of the kidney. In contrast to these, rather more marked lesions were found in the group of vascular nephritides, those produced by cantharidin, arsenic and diphtheria toxin. In the latter group Takayasu made out an increase in the thickness of the capillary wall and in the size of the nuclei of the glomerulus, which gave the appearance of a swollen, cellular, glomerular tuft. Associated with these changes were other minor lesions.

In connection with the study of some experimental renal lesions during the past winter, I have observed the following glomerular lesion which seems worthy of description, since it appears to have been overlooked by Takayasu and other investigators of the lesions of experimental nephritis. The lesion consists of the appearance in the glomerular tuft of small, round or oval, rarely irregular, homogeneous droplets, varying from a half to four microns in diameter. (Figs. 1 and 2.) These droplets appear in the wall of the capillaries making up the glomerular tuft, and do not occur either in the lumen of the capillaries or in the space between the glomerular tuft and the capsule of the glomerulus (Fig. 3) except in rare instances, when their position might be explained as an artifact in preparation. They were not found in the epithelium lining Bowman's capsule. In some glomeruli only a few scattered droplets occur, while in others they are very numerous. Very often in a glomerulus they tend to occur in groups of three to six or eight, and where the larger groups are found, almost always some of the droplets are considerably coarser than others of the same group. In some rabbits almost every glomerulus contains many droplets of fairly large size; in others the droplets are uniformly smaller. In some rabbits some glomeruli contain numerous droplets while adjacent glomeruli are free from them. This focal distribution seemed to have no relation to the other lesions of the kidney, and no cause for it was to be made out. In kidneys showing slight degrees of the lesion only here and there a glomerulus showed a few fine droplets. In a series of twenty-six successive rabbits studied in this connection, these droplets were found in the glomeruli of thirteen animals. Thirteen of this group of ani-

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* This lesion of experimental nephritis was demonstrated at the meeting of the Association of American Physicians, held in Washington, D. C., May 12 and 13, 1908.

[1] For a review of recent literature on this subject see Christian: Experimental Nephritis. Boston Med. and Surg. Jour., 1908, clviii, 416, 452.

[2] Richter: Die experiment. Erzeugung von Hydrops bei Nephritis. Beiträge zur klin. Med., Festschrift Herrn Prof. Senator, Berlin, 1904, 283.

[3] Schlayer und Hedinger: Experiment. Studien über toxische Nephritis. Deut. Arch. fur klin. Med., 1907, xc, 1.

[4] Schlayer, Hedinger und Takayasu: Ueber nephritisches. Oedem Deut. Arch. fur klin. Med., 1907, xci, 59.

[5] Takayasu: Ueber die Beziehungen zwischen anatomisch. Glomeruln veränderungen und Nierenfunktion bei experiment. Nephritiden. Deut. Arch. fúr klin. Med., 1907, xci, 127.

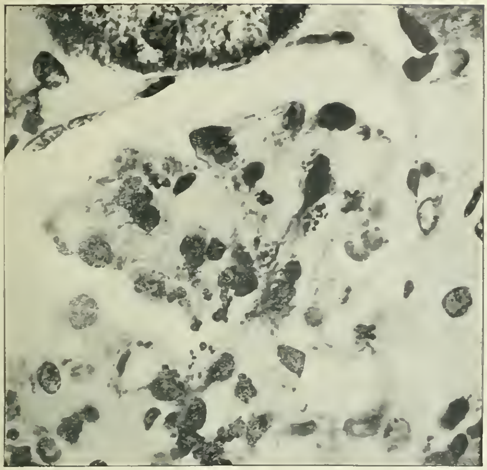

FIG. 1. Rabbit 7 (1,000 diameters). Phosphotungstic acid hematoxylin. Glomerulus with hyaline droplets.

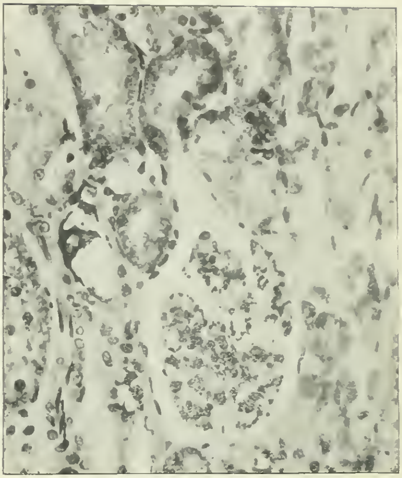

FIG. 3. Rabbit 3 (375 diameters) Phosphotungstic acid hematoxylin. Glomerulus showing hyaline droplets. Connection of glomerulus with tubule shown. No droplets in glomerular space or in tubule.

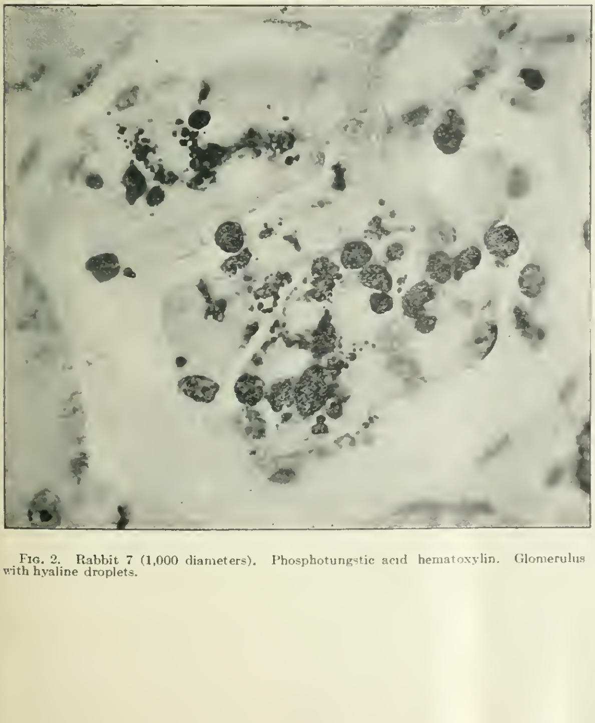

FIG. 2. Rabbit 7 (1,000 diameters). Phosphotungstic acid hematoxylin. Glomerulus with hyaline droplets.

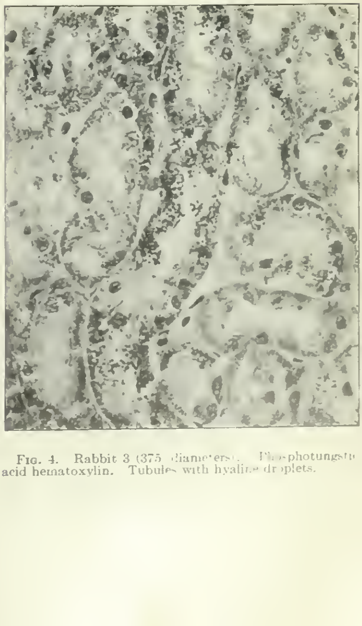

FIG. 4. Rabbit 3 (375 diameters). Phosphotungstic acid hematoxylin. Tubules with hyaline droplets.

mals had received doses of uranium nitrate, and of these thirteen, eleven showed the lesion in a varying degree. The other two rabbits which showed this glomerular lesion were animals which had received doses of potassium bichromate. There were four such animals, and two of these showed the lesion slightly marked. The animals failing to show the lesion had been treated as follows: One rabbit had received both potassium bichromate and mercuric chloride, three had received trypan red, two cantharidin and two arsenic. All of these substances were given subcutaneously. One animal had been killed without having received any toxic dose because it showed a slight spontaneous albuminuria. In most cases the animals were killed rather than allowed to die spontaneously. That they had received sufficient poison to produce a renal lesion was shown by the occurrence in all of the animals of albuminuria and cylindruria of varying degree. The glomerular droplets were most numerous in rabbits 3 and 7. Rabbit 3 had received 4 mgm. of uranium nitrate on July 2, similar doses on July 3 and 4, and was killed on July 5. Rabbit 7 received 5 mgm. of uranium nitrate on July 11 and was killed on July 16. The two rabbits which received uranium nitrate and failed to show the lesion were rabbit 5 and rabbit 11. Rabbit 5 received 5 mgm. of uranium nitrate and was killed the next day. Rabbit 11 received 1 mgm. of uranium nitrate and was killed seven days later.

The droplets which are here described stain intensely blue black with Mallory's phosphotungstic acid hematoxylin stain, and resist decolorization with ferric chloride for a long time. With eosin and methylene blue they stain pale red. The exact nature of the droplets is not known. Usually they can be distinguished quite easily from the somewhat more irregular granules associated with fibrin threads in the glomeruli. These fibrin lesions occur in some forms of experimental nephritis and are found both within the lumen of the capillaries and in the capsular space, as well as sometimes in the wall of the tuft. The droplets described in this paper appear to be homogeneous and resemble in this respect the hyaline droplets which have been described in the tubular epithelium in various forms of nephritis in man. It is interesting in this connection that of all these twenty-six rabbits a considerable part showed droplets of similar staining reaction in the tubular epithelium (Fig. 4). These droplets, however, were almost always smaller than the larger ones of the droplets encountered in the glomerular tufts, and they occurred both in the animals which showed the droplets in the glomeruli and in those which did not. In other words, there is no apparent relation between the occurrence of the droplets in the glomeruli and the droplets in the tubular epithelium. Those in the glomeruli are a very constant occurrence in the animals which had received doses of uranium nitrate, while those in the tubular epithelium occur with about equal frequence in the uranium nitrate rabbits and in the other animals.

There is no histological evidence to suggest that these droplets pass from the wall of the capillary into the glomerular space and so into the current of excreted urine. They were at no time seen in the capsular space or in the first part of the convoluted tubule. Consequently, there is nothing to suggest that they play any part in the formation of casts. It is possible that at some stage such a passage of the droplets into the current of the urine might take place, but this stage was not observed. The occurrence of such droplets must indicate that considerable injury to the wall of the glomerular capillary has been produced by the toxic substance employed. Others studying the uranium nitrate kidneys have described degeneration and necrosis of the tubular epithelium, which we have also found present very constantly, but they have overlooked apparently the glomerular lesion described above.

The very frequent occurrence of these hyaline droplets in the glomeruli of animals receiving uranium nitrate, and their absence in the other animals, suggests a direct causal relation between the lesion and the drug. A much larger series of animals will be necessary, however, to determine whether these glomerular droplets are in any way characteristic for uranium nitrate. It is quite possible that other substances will produce the same change, and it may be that those substances which failed to produce this lesion in this series of rabbits would produce the same effect as the uranium nitrate if used in other dosage than the one employed. This and other points will be the subject of further experiment.

DESCRIPTION OF PLATES.*

Figs. 1 and 2. High power (1,000 diameters). Rabbit No. 7. Each shows a glomerulus with hyaline droplets.

Fig. 3. Low power (375 diameters). Rabbit No. 3. Shows glomerulus opening into a convoluted tube. There are hyaline droplets in the glomerular tuft but none in the glomerular space or tubule.

Fig. 4. Low power (375 diameters). Rabbit No. 3. Shows hyaline droplets in epithelium of tubules.

◆

THE MENACE OF THE SWIMMING TANK.

BY CAROLUS M. COBB, M.D., BOSTON.

I have had occasion to treat quite a number of cases of ethmoiditis and acute otitis media which apparently were caused directly by diving in a swimming tank. These cases occur so often and they may be, and often are, so serious, not alone in regard to the hearing, but even to the life of the patients, that it seemed to me a brief description of a few of these cases might be of use to the profession. I believe that those who have these swimming tanks in charge use the utmost care to keep them clean, but they cannot, of course, keep them sterile, and even if they succeeded in sterilizing the tank the first person who entered it would contaminate it. The mystery of it is not that people infect the nose, throat and ear by this contaminated water, but that they insist on putting their heads under it. They would not put their heads under the water of an ordinary bath tub in which they had taken a bath, and yet the bath tub is thoroughly washed after each bath, while the swimming tank is only washed, or rather has the water changed, once or twice a day. The only explanation which I can offer of why people are willing to put their heads under this dirty water is this that they are deceived by the ostentatious methods which are employed and believe the water is clean. The first case in which I was certain that the infection came from this source was interesting on account of the quick return of the disease when the patient again visited the swimming tank. Briefly the history is as follows:

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* These photographs were made by Mr. L. S. Brown, of the Massachusetts General Hospital, for whose careful work I wish to express my thanks.

H. J. Aged seventeen, during the fall of 1900 visited a swimming tank in a nearby town. After he had made five visits he consulted me for an acute ethmoiditis, worse on the right side. He had moderate fever for a few days but soon improved under treatment. He was warned against the swimming tank, but could not believe that he acquired his nasal disease there so he again visited it and a fresh attack promptly followed the visit. It was necessary for him to have a third experience before he was convinced. Since the last attack he has refrained from diving in these tanks and has remained free from the disease.

The next case which I wish to report is interesting because it did not originate in a swimming tank, but in a lake on the shore of which was located a large camp for boys. The water was shallow enough so that it was disturbed from the bottom by diving. The inflammation was not as severe as in the first case and it affected the ear rather than the nose.

D. B. Aged twenty. Spent a part of July and August, 1905, at a camp with a large number of young men of his own age. It was one of their pastimes to swim and dive in the lake. He was conscious on one occasion of a feeling of fullness in the left ear, and as the feeling persisted he consulted me on his return. I found that he was suffering from an attack of sub-acute otitis media which was a number of weeks in clearing up. He finally recovered with considerable impairment of hearing in that ear. The infection was of a mild type but very persistent.

I will report but one other case. This was due to infection from a swimming tank, and at one time the case looked as though it might be serious. Fortunately he finally recovered and he has entirely given up the pleasure of diving in a swimming tank.

J. S. Aged fourteen, consulted me in January, 1908, for double ethmoiditis and double acute suppurative otitis media. The history was as follows: that he had been attending a gymnasium where one of the chief features was a swimming tank. He had used the tank freely, swimming and diving, until a few days before, when after diving he had a very unpleasant sensation in his ears; before morning he began to have earache and two days later both ears began to discharge. When I saw him he had double ethmoiditis and both ears were discharging and the left mastoid was decidedly tender. It required long, careful and persistent treatment to bring about recovery in this case but he finally escaped the necessity of a mastoid operation and is now far advanced towards recovery. These cases are selected out of a large number of similar cases of infection acquired in this way. The danger is a very real one and it would seem that the sooner those who patronize these swimming tanks realize the danger the better it would be for the health of their upper respiratory tracts.

◆

ALPHAMONOBROM-ISOLVALERYLUREA. A NEW NERVE SEDATIVE AND SOMNIFACIENT.

BY WILLIAM HENRY PORTER, M.D.,

Professor of Pathology and General Medicine at the New York Post-Graduate Medical School and Hospital; Attending Physician to the New York Post-Graduate Hospital, etc.

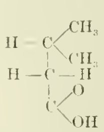
(Concluded from Vol. clviii, No. 26, p. 974.)

With this conception of nervous affections and their causative factors, medicinal agents of all kinds which may be of value in their management can be intelligently and scientifically investigated. This is especially true when the system has fallen into this state in which it has lost its natural power to control harmoniously the various functions of the body while under the stimulus of the normal food elements.

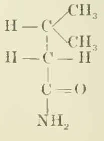
Before attempting to elucidate the possible results obtainable from this somewhat new remedy, alphamonobrom-isovalerylurea of the formula $(CH_3)_2CH.CHBr.CONH.CONH_2$, or bromural, we must analyze its developmental composition and determine also the possibilities of its decomposition and the resulting products.

It seems that the chief object of Dr. Saam,[2] the discoverer of this compound, was to secure a remedy which would not produce the after-effects of the bromides, but, on the other hand, would induce sleep without the narcotic properties of chloral hydrate and allied drugs.

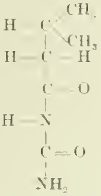
In Dr. Saam's opinion the starting point for a preparation of this kind seemed to be isovaleric acid.



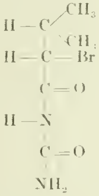
Experiments upon animals showed, however, that isovaleric acid is not a sedative but merely acts as an acid causing diarrhea and has a tendency to irritation of the gastric mucous membrane. The salts of isovaleric acid do not possess any advantages over the free acid because the acid is again reproduced in the stomach and intestinal tract. Esters of isovaleric acid were tried but without satisfactory results. An amide was then prepared and the carboxyl group converted into a ketone group. The isovaleric amide has a



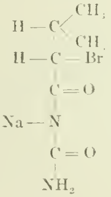
moderately sedative action, but in larger doses is poisonous, hence the amide of the above formula was unsuitable and another amido-compound was sought for. Dr. Saam found that the best results were obtained with urea. The resulting isovalerylurea proved to be a stronger sedative than the foregoing amide preparation and was not toxic. The sedative action, however, was not sufficient to induce sleep. It was, therefore, necessary to render more potent the active isopropyl group in the isovaleric group. This was accomplished by introducing a halogen atom into the grouping. In this manner the isopropyl group was made to act more potently upon the central nervous system. The chlorine, bromine and iodine compounds could be so combined, but the iodine compound was only slightly hypnotic and too unstable to be of practical value. Experiments upon animals, however, showed also that the chlorine compound cannot be employed therapeutically, owing to its pronounced after-effects.



Therefore, the available halogen resulted in a bromine preparation and this was introduced to the profession as an alphamonobrom-isovalerylurea or bromural. The therapeutically active agent in bromural is said to be the isopropyl group, for if this isopropyl group (C_3H_7) be replaced by an ethyl group (C_2H_5), the analogous butyric acid compound will be formed, which does not possess sedative properties.



Bromural is said to pass unaltered through the stomach, but is dissolved in the intestinal tract and is then absorbed as such into the circulation. Ultimately a complete oxidation takes place, so that the preparation is completely transformed within five hours and is soon excreted from the organism.



As indicated in the above formula, it is clear that Dr. Saam obtained this substance by combining urea with bromine and the valeric acid group. It occurs in the form of white needle-like crystals, soluble in hot water, ether, alcohol and alkalies, but with difficulty in cold water. The crystals melt at 293° F. = 145° C. Its molecular weight is 278.42.

If we break up this complex substance by a process of oxidation by the use of 23 atoms of oxygen the following results can be obtained:

$$C_6H_{11}N_2O_2Br + 23(O) =$$
$$BrO_3H + 2(HNO_3) + 6(CO_2) + 4(H_2O).$$

The bromic and nitric acid formed by the oxidation of the bromural acting upon the sodium phosphate results in the formation of sodium bromide and nitrate of soda, thus:

$$BrO_3H + Na_3PO_4 = NaBr + Na_2HPO_4 + O_3,$$

and

$$2(HNO_3) + 2(Na_3PO_4) = 2(NaNO_3) + 2(Na_2HPO_4).$$

Dr. v. d. Eeckhout,[3] under the direction of Professor Gottlieb, administered bromural to rabbits in doses varying from 0.2 to .25 gm. per kilogram body weight, and found as the result of these experiments that it produced sleep lasting from one to two hours; 0.1 gm. per kilogram produced slight inco-ordination. When given in doses ranging from 0.25 to 0.3 gm. per kilogram body weight it produced sleep which lasted for several hours with little or no perceptible influence upon the circulation or respiration. But when it was given in 0.5 gm. doses per kilogram it caused slight respiratory depression. Very large doses produced death by failure of respiration, the heart continuing to beat after the respirations had ceased. This would indicate that large doses can act as a depressant to the respiratory center. At necropsies made after its free use, the heart, liver and kidneys were found to be normal, which shows that it produces no degenerative changes in the protoplasm of cellular structures.

Owing to the fact that much smaller doses are required in man than in animals to produce its sedative and somnifacient effects, no toxic actions have been recorded as the result of its administration. But it, like all other efficient drugs, may have deleterious effects if carried beyond the physiological limit. Used within this limit it appears to be absolutely harmless and less depressing than is the case with many of the other remedies of this class that are in general use.

From the atomic composition of bromural, and its decomposition possibilities, its action can be explained by one of three methods, as already outlined for all substances introduced into the animal economy. By virtue of its contained bromine it can act according to the common law which is applicable to all the so-called inorganic compounds. If listed in this class the natural assumption is that it passes into and out of the system undecomposed. Assuming this to be the case, it must act as do all inorganic substances, by a process which is mechanical and irritating, not chemically. This being the case, it may either inhibit or stimulate directly the activity of the chemical changes within the system, or the action may be secondary and through the biological enzymes and especially in relation to those appertaining to the nervous mechanism. This action may be through the inherent enzymes or directly upon the structures themselves, just which has not been accurately determined. It is more probable, however, that the action is stimulating rather than inhibitory, and thus it raises the depressed and irregularly acting system up to the normal or regular standard of acting. This accomplished, the abnormal manifestations subside, or the individual falls into a quiescent state or a condition of natural sleep. The reason for this assumption is the fact that bromural is not a powerful somnifacient unless a sufficient amount is given to overwhelm the chemical activities of the nervous system. When carried to this extreme, it becomes toxic and ceases to be of therapeutic value. Another reason for looking upon the action as one of stimulation instead of depression is the oft-recorded fact that the patient awakes from its sleep-producing effects refreshed, or in a condition more like the result obtained from natural and unaided sleep. This, as is well known, is not always the case when some of the powerful somnifacients are used.

On the other hand, if we assume that it is decomposed and thus produces its effects, it may act in a number of ways. The carboxyl and methylene groups, together with the bromide and nitrate of soda, may still act mechanically; or the two former may be oxidized into their component parts, yielding heat, and thus stimulate the nervous mechanism, changing its action thereby from that of depression, incomplete and irregular action, to that of, or approaching, normal activity. When this occurs the nervous manifestations are allayed, and in cases of mild insomnia sleep is produced which closely approaches that which is physiological. So long as this or any other drug is used to simply raise a weak and depressed nervous mechanism up to the normal standard, and thus disperse the nervous symptoms and induce sleep, the action is beneficial, but when nervousness is allayed or sleep induced by those agents which overwhelm, as it were, and hold in absolute abeyance the chemical activities of the nervous system, the sleep produced is not natural or refreshing.

The bromide of soda formed by decomposition apparently must act as do all bromide salts, by their mechanical presence. All the bromides have a decidedly inhibitory action either through the biological enzymes or by direct action upon the chemical changes taking place in the nerve structures. With the bromides this action seems to be so strong that when given in large doses an almost anesthetic effect is produced. Fortunately, the bromides, even if given in very large doses, are not profoundly toxic. But their continued use in large doses must of necessity impair the nutritive activity of the nervous system, and thus they may be decidedly detrimental.

The nitrate of soda acts also by its mechanical presence and has decided power to stimulate protoplasmic activity and particularly that of the hepatic cells; thus it augments the activity of the hepatic gland and aids in improving metabolism.

Viewed in this light we find that bromural is capable of influencing the physiological, chemical activities of the system favorably in a number of different ways. So much so, that general metabolism can be improved by its utilization in the system as well as that of the nervous mechanism. Hence it is of great value in the management of almost all of these troublesome nervous cases, either with or without recognizable organic lesions. In all instances favorable results follow in direct proportion to our success in reestablishing a higher general metabolism.

Bromural is not a powerful somnifacient, but one that, by its combined power to augment nutrition and mildly stimulate a depressed and irregularly acting nervous system, does in many instances alleviate or enable nature to remove the troublesome symptoms. It is of value also as an aid to induce natural sleep, from which the patient awakes greatly refreshed. All of these results are produced apparently without any ill or after effects, which cannot be said of many other remedies that are used.

In the management of all classes of nervous affections, every etiological factor must be fully sought out and carefully considered and removed. The digestion and assimilation must receive full attention and the hygienic conditions must be maintained at the highest standard, otherwise all treatment and all drugs alike will fail to produce the results expected of them. When all this has been accomplished, bromural, like many other remedial agents, will often be found of decided value as an aid to nature in her efforts to change the metabolic activities of the system from the abnormal to the normal, thus bringing about what can justly be classed as a cure.

Used in this manner and in a large variety of nervous cases, bromural has, in my experience, been found, in most instances, to produce very satisfactory results, being well borne by the stomach in all cases, in some instances acting more satisfactorily than any other drug in this class. In other cases it has proved less effectual, a statement which is equally true and can be made honestly of all so-called nerve sedatives and somnifacients.

So far as time and opportunity has permitted this new substance to be investigated, both experimentally and clinically, it has apparently acted with the smallest amount of untoward effects and with its full share of good results. At least it has enough to its credit to commend it to the profession for a fair and unbiased trial. So far as my experience has gone, it has none of the unpleasant effects which are known to follow in the wake of some of the somnifacients and bromide preparations, even when they are administered in therapeutic doses. Bromural is best administered to adults in doses ranging from 0.3 gm. to 0.6 gm. (5 to 10 gr. at a dose), at or near bedtime, or in 3 gm. (5 gr.) doses three or four times daily. To children and infants it is given in smaller doses. My preference in the use of all somnifacients is to give them in small and repeated doses. For general nervous conditions small and frequently repeated doses unquestionably yield the most satisfactory results.

To encourage sleep a moderate dose after the last meal of the day, followed by a similar dose at bedtime, usually gives the best results and is the least likely to be followed by unpleasant aftereffects, if any should follow. This is a rule in regard to the time of administration that holds good for all somnifacients so far as my experience has gone in their use.

Unless bromural is taken in very large doses it can hardly be classed as a powerful somnifacient. Under such circumstances, it, like all powerful drugs, may, in some instances, produce unpleasant after-effects and might prove mildly toxic. This is a statement, however, that applies to a host of substances which are capable of producing very decided effects upon the system; still it is no bar to their continued and daily use as therapeutic agents.

The greatest value of bromural, however, is found in its pleasant and soothing effects upon the nervous system; hence it is of great service in the management of nervous conditions as met with in women and children.

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Reports of Societies.

THE AMERICAN GYNECOLOGICAL SOCIETY.

Thirty-third Annual Meeting, Held at Philadelphia, Penn., May 26, 27, 28, 1908.

The President, Dr. J. Montgomery Baldy, of Philadelphia, in the chair.

The sessions of the society were held in the assembly hall of the College of Physicians.

After an address of welcome by Dr. Edward L. Duer, of Philadelphia, which was responded to by Dr. William M. Polk, New York, the reading of papers was begun.

SYMPOSIUM: IMMEDIATE VERSUS DEFERRED OPERATION FOR INTRA-ABDOMINAL HEMORRHAGE DUE TO TUBAL PREGNANCY.

Dr. Florian Krug, of New York, said that whenever opinions diametrically oppose each other on mooted points in surgery, the truth as well as the best interests of the patients are not to be found at either extreme, but usually in the middle.

It cannot be conceded that in any case of ectopic gestation operation should be deferred for as long a period as it lately has been recommended by some, nor should the patient be subjected to a hasty operation in every case, even when the diagnosis has been established beyond a reasonable doubt.

The severity of shock is not always proportionate to the amount of blood lost. Comparatively few cases die from actual hemorrhage. In most cases, termed "tragic" or "cataclysmic," the hemorrhage has been seriously aggravated by trauma, viz., curettage, too vigorous bimanual palpation, etc.

Some cases will die before surgical aid can reach them, others will die in spite of it, some have died because of it, surgical interference having taken place too hurriedly without proper preparations.

Dr. F. F. Simpson, of Pittsburg, said that (1) the first hemorrhage is rarely severe. That is the time for diagnosis and for operation as early as elective conditions can be brought about. (2) The teaching that death is imminent when rupture occurs makes the inexperienced treat the affection lightly until the occurrence of a second or a third hemorrhage, which may indeed be alarming. (3) If the patient is almost exsanguinated, very little additional depression will wipe out her margin of reserve strength. (4) With simple, prompt and proper treatment, such as any practitioner should be able to give, hemorrhage from rupture should rarely cause death. (5) The decision for immediate operation should rest upon a low mortality for such operations, *in the individual operator's hands*, rather than upon an essentially high mortality the disease has been supposed to have.

Dr. Hiram N. Vineberg, of New York, said that the amount of intraperitoneal hemorrhage varies within wide bounds. In the majority of cases it is not so great as to be a direct menace to life. Operative treatment may be as early as feasible, or deferred a few days to suit the convenience of the operator and the exigencies of the surroundings.

In a very small percentage of cases the hemorrhage is so great as to be a direct menace to life from anemia and from pressure upon the diaphragm and consequent crowding of the heart and lungs. These have been termed by the writer "cataclysmic" cases, from the sudden onset and from the rapid inundation of the abdominal cavity with blood. Immediate operation in this class of cases is imperative and if aided by an intravenous saline infusion, expeditiously and skillfully administered, will save an otherwise doomed life. The accompanying shock forms no contra-indication to surgical intervention for the purpose of arresting any further bleeding and to relieve the great intra-abdominal pressure upon the heart and lungs. In cases of post-operative hemorrhage we would not be deterred from intervention because the patient was in shock from having just undergone a serious operation, and the same applies to the shock attendant upon a very copious intra-peritoneal hemorrhage from rupture or abortion of tubal pregnancy.

Dr. E. E. Montgomery, of Philadelphia, said that hemorrhage may be the result of rupture of the tube, the perforation of its wall by the development of the chorionic villi, the separation of the fetal sac in part, and the escape of blood into the peritoneal cavity through the abdominal end of the tube into the uterus, or its retention in the tube, and finally, the escape of the fetus and its sac into the abdomen without rupture, the tubal abortion. In all of these conditions hemorrhage is a factor in the majority of the cases, probably not one which would prove fatal, even though the patient fails to come to operation. Many of the earlier reported cures by the employment of electricity were cases in which the condition was only diagnosed after rupture and the cure consisted in the absorption of the clot, which more than likely would have disappeared just as rapidly had the measures been omitted. As the arterial tension is reduced by the loss of the blood and the stream has diminished force, there is naturally a tendency to the formation of a clot, which may arrest further bleeding. In a considerable number of cases this fortunate termination does not occur and the patient bleeds to death. Numbers of such cases are on the records of the coroners' physicians in our large cities. These are the cases in which prompt action becomes a valuable factor, and it is just as important to secure the bleeding vessel within the body as it would be were it more superficial. In these serious cases we can feel justified in resorting to stimulants only when we are sure the open vessel is securely closed, and of this we can only be certain when the vessel has been exposed.

Dr. C. C. Frederick, of Buffalo, said that as the majority of tubal hemorrhages are diagnosed days or weeks after primary rupture, the above decision is needed only in a small percentage of instances. Only a very small percentage of ruptures produce at once a dangerous hemorrhage. The vast majority stop bleeding soon after rupture, recurring coincidently with manifestations of shock at more or less frequent intervals. Examination of the hemoglobin index at frequent intervals, together with a red blood count, also at frequent intervals, are the best means known to determine if hemorrhage is progressive. If hemorrhagic shock continues and blood examination shows progressive anemia, operate at once, using normal salt solution, adrenalin, etc., to stimulate circulation. If hemorrhage is not progressive, wait, using same means to recuperate the patient, and then operate.

Dr. Egbert H. Grandin, of New York, gave a résumé of his personal experience. He believes that the abdominal route is the only rational, logical and safe one, except in the formation of hematocele, or for the purpose of diagnosis, when the vaginal route should obtain. He looks upon ectopic pregnancy as the most malignant disease to which woman is subjected, possibly excepting carcinoma, and the malignancy increases in proportion as the surgeon sits on the fence and waits. When the woman is in deep shock, the active hemorrhage has ceased; *ergo*, wait until she has rallied and then go in, always by the abdomen. When bleeding is going on he does not believe one should stimulate the patient until the abdomen has been opened and the source of the hemorrhage checked. Stimulation, especially intravenous, simply heightens blood pressure and makes the woman bleed more. In hematocele formation he believes the surgeon should operate by the vagina and clean out. If the condition of the patient permits, he would open the abdomen and exsect the damaged broad ligament.

Dr. W. P. Manton, of Detroit, said that in attempting to answer the question as to the time to operate in ruptured tubal pregnancy one is confronted with a proposition somewhat analogous to that which occupied the attention of surgeons concerning appendicitis in the earlier days, the essential difference being that the former was recognized and described during nearly a century and a half, while the latter has been known for hardly more than two decades. Knowledge of tubal pregnancy has been of slow growth and the evolution of surgical technic has been more gradual.

In determining the course to pursue in the treatment of intraperitoneal hemorrhage due to tubal pregnancy, a rare judgment fortified by experience is demanded. While no golden rule will lead the surgeon to success, accumulated experience demonstrates that where there is free blood in the peritoneal cavity, and hemorrhage going on, the sooner operation is undertaken the better are the chances for rescuing the patient.

It is literally true in the management of this calamity that "the man that wandereth out of the way of understanding shall remain in the congregation of the dead."

Dr. H. J. Boldt, New York, said that whether an operation for intraperitoneal hemorrhage from ectopic pregnancy should be deferred or be undertaken immediately must depend on the judgment of the individual physician, based on his personal experience, and also on a careful study of the experience of others.

He premised his remarks with a statement of what he meant by a primary hemorrhage from ectopic gestation and what by a secondary intraperitoneal hemorrhage.

He said: Let us assume that a tubal pregnancy patient shows no noticeable symptoms of the faulty impregnation until suddenly an extensive tubal rupture occurs, which causes complete collapse, evidenced by absence of the pulse at the radial arteries, with the other signs of a sudden and profuse loss of blood. The shock may be so severe as to cause absolute unconsciousness. This is what he calls a primary hemorrhage.

Assume another patient with ectopic gestation, who has experienced the symptoms that usually accompany a typical case of tubal abortion, or of partial tubal rupture, with the symptoms of an intraperitoneal hemorrhage. She is not in collapse, however, although her pulse may be very small and rapid and her appearance that of acute anemia. Her mental faculties are perfect, or so nearly so that she may give the physician intelligent answers to his questions. She improves with rest, and after a day or two her general condition will have improved materially. Then another attack comes on which will cause collapse as the result of the intra-peritoneal hemorrhage. The collapse is not, however, caused by the primary hemorrhage, but by the secondary bleeding.

An analysis of the cases in which there was profound collapse from intra-peritoneal hemorrhage, but in which nothing from the history pointed to previous intra-peritoneal bleeding, shows that by far the greater majority rally from the bleeding sufficiently to come well out of the shock. To operate on a patient in profound collapse from a primary hemorrhage is a mistake because with proper treatment the patient may rally in the course of a few hours. The author's own experience has been that in these cases bleeding is renewed within a few days, or even sooner. An operation should not be deferred in patients with active symptoms of partial tubal rupture or tubal abortion. The sooner they are operated upon the better. If the general condition of the patient shows a slight improvement one should not operate then, but wait until the patient has more fully recuperated, if this seems likely. He insisted that all the requirements for an immediate operation remain in readiness, so that should renewed bleeding be indicated by increase of the pulse rate, with lessening of its volume and perhaps other symptoms of renewed sinking, operation may be done at once. It is of the utmost importance that the intervention should be done in the shortest possible time, not exceeding fifteen minutes in all. No time should be lost in looking for the embryo, or in washing out the abdomen. Get out the readily accessible clots and dip the bulk of blood out rapidly with the hand, leaving the rest; pour into the abdomen a pitcherful of saline solution, leaving it to be absorbed with the blood that has been left. His preference is not to transport such patients to a hospital, but to operate upon them in their homes, because of the increased danger caused by the transportation.

How long shall operation be postponed if a patient rallies? Not at all, if she has really rallied; when she has a fair pulse, is perfectly intelligent in her answers and has a normal skin. To wait longer is for her to assume risks. Should symptoms occur at any time which indicate that intra-peritoneal bleeding is renewed, operation should no longer be delayed, because with a patient in favorable condition the mortality from operation is very low, perhaps less than 5%.

Dr. A. Lapthorn Smith, of Montreal, said that there is only one treatment for tubal pregnancy, and that is early removal. If rupture has taken place the case becomes an emergency one. Even if the patient is unconscious from shock (hemorrhage), he would not wait until she rallied, for this will mean a fresh hemorrhage, but he advises cutting down and tying the bleeding vessel, replacing the blood that is lost with normal salt solution.

Dr. B. F. Baer, of Philadelphia, said it is always imperative to act at once, secure and close an open, bleeding vessel, and this holds true in hemorrhage from a ruptured tubal pregnancy. But there may be a doubt in a certain case of very profound collapse whether the vessel is still open and whether it might not be wise to spend a few hours in restorative measures.

Dr. August Martin, of Berlin, said there is no necessity for operating on these cases hastily if hemorrhage has ceased, but if bleeding is still going on, we should follow the surgical rule to operate with a view to stopping the hemorrhage. As to whether the operation shall be done at the residence of the patient or not depends on circumstances, but preferably the surgery should be done at a hospital. If the case is urgent, operation should be done immediately and by the abdominal route, but in less severe cases the vaginal route can be selected.

Dr. Seth C. Gordon, of Portland, Me., quoted the dictum of Lawson Tait that "no man living ever made a diagnosis of extra-uterine pregnancy before rupture." In 1887 a pupil of the speaker telegraphed him to the effect that he had a case of extra-uterine pregnancy and desired Dr. Gordon to be ready to come to see the patient at a moment's notice. Two hours later rupture took place, but it was twelve hours after rupture had taken place before the speaker saw the patient. After opening the abdomen he removed four quarts of bloody fluid and a fetus which was about ten or twelve weeks old. The woman made a good recovery. He mentioned three other cases he had operated on after rupture had taken place, with recovery of all the women. He recalled only 2 cases in which he was able to make a diagnosis before the occurrence of rupture, and these were operated on promptly and both women recovered.

Dr. E. W. Cushing, of Boston, said his attention was called to this subject some twenty years ago by a case in a near relative. Those who are old enough would recall many cases of so-called hematocele which got well, and he doubted whether women have tubal pregnancy any oftener to-day than they did in 1888. Notwithstanding this, he believes in operating on these cases, and yet he has seen several patients whose symptoms of tubal pregnancy with or without rupture were so slight and so obscure that it was not easy to obtain consent to operate. He mentioned 2 cases upon which he had operated within two months, the operations having been followed by the recovery of both patients.

Dr. Hunter Robb, of Cleveland, said that more conservatism in the treatment of ectopic pregnancy is called for in the majority of cases. When the diagnosis of ectopic pregnancy is certain, operative measures are indicated; but in most cases the danger is not sufficiently imminent to warrant immediate interference unless the condition of the patient is otherwise satisfactory. Many women not only survive the effects of a tubal abortion or rupture, but also recover even without an operation. Not more than 5% of the victims of ectopic pregnancy die at the time of rupture, whereas after the immediate operation in cases of ectopic gestation in 1,176 cases in 25 clinics the mortality was 8%. When a patient is seen in a state of collapse as the result of a ruptured ectopic sac, she should not be operated on until the condition of shock has been tided over. These patients, when they die, usually succumb not from loss of blood, but mainly from shock. Why, then, should we superadd to the original shock the additional shock of a major operation with all the exhausting preliminary procedures? In support of the view that these patients die from shock, and not from loss of blood, we have clinical observations of good authorities, and also experiments on animals, the first showing that patients whose abdomens were filled with bloody fluid survive; and the second proving that dogs, when exposed to dangers from hemorrhage sufficiently severe to more than equalize the factor of resistance, do not succumb. In most of these cases, when we operate to ligate a bleeding vessel, no bleeding vessel is found. In some cases the bleeding is undoubtedly started again by the manipulations of the operator. What frequently appears to be a continuing hemorrhage may be produced by a welling up of the blood that was poured out when the sac finally escaped through the fimbriated end of the tube. Some of the reasons why the hemorrhage is not so great as has been generally supposed at the time of rupture are: (1) The great majority of ectopic sacs rupture between the first and third week of gestation. (2) The point at which the impregnation takes place is a small area formed by a diverticulum in the tube, and the chorionic villi have only a feeble attachment. (3) Seventy-five to 78% of the ruptures occur through the fimbriated end of the tube and are tubal abortions and not more dangerous, so far as hemorrhage is concerned, than those occurring through the cervix. (4) The next most frequent place of rupture is the isthmic portion of the tube, which is also free from any large blood vessel. (5) The point of rupture in the gestation sac practically never involves the ovarian or uterine artery. (6) As a result of the inflammation which precedes the ectopic gestation, there is a relative increase of the connective tissue in the tube, and owing to the contraction of the connecting tissue the vascularity of the tube is limited. (7) The placenta is generally attached to the posterior wall of the tube and as the rupture is generally through the anterior or lateral wall of the tube, the placenta is not lacerated, but retains a firm attachment to the wall of the tube and is subjected to pressure.

Physiologists teach that a woman weighing 130 lb. must probably lose 4 lb. of blood before succumbing to the effects of the hemorrhage *per se*. So large an amount of blood is rarely found in the abdominal cavity; the bloody fluid is a mixture of blood and a serous exudate. The sudden removal of a large quantity of recently accumulated fluid in the abdomen before the other vessels have had time to adapt themselves to the altered mechanical conditions is dangerous and may be followed by fatal syncope. Patients in whose cases the bleeding would be sufficient to cause death are rarely seen in time to be saved by an operation for ligating the bleeding vessel. The best operators give a percentage of 40 or 50 as their death-rate after immediate operations during shock. The deferred operation has given better results in the hands of equally good operators. So long as there is a reasonable evidence that immediate operation may be the wrong procedure, it is the duty of the physician to hold his hand and leave something to nature.

Dr. J. Wesley Bovee, of Washington, D. C., said there can be no doubt but that if some cases of tubal pregnancy are allowed to go without operation the patients will die from a subsequent hemorrhage. No case is safe without operation. He prefers the abdominal to the vaginal route. If the case is very urgent the surgical work should be correspondingly rapidly done. There is no indication, in his opinion, for vaginal section in cases of ectopic pregnancy.

Dr. Andrew F. Currier, of New York, agrees with those who have spoken that these cases are surgical, and just as a surgeon will endeavor to stop a hemorrhage that occurs from a bleeding vessel in any portion of the body, so is it equally important and proper to stop it in cases of tubal pregnancy. He thinks it takes a very acute sense to know when bleeding in these cases has actually ceased, and if one is satisfied that there has been bleeding, he did not see any good reason for delay in operating, except in those cases in which the symptoms are mild and in which it is possible to bring the patient under more favorable circumstances for operation, but if hemorrhage has occurred the woman should be treated in a surgical manner.

Dr. Hugo Ehrenfest, of St. Louis, said he operated on a woman a few weeks ago in whom infection had occurred from a well-formed hematocele from an attempt to perform a criminal abortion on herself. She was three months advanced in pregnancy. A diagnosis of infected hematocele was made from the presence of a mass and septic fever. Operation confirmed the diagnosis.

Dr. F. Pfannenstiel, of Germany, said there are a few rare cases in which hemorrhage is so great that they must be operated on promptly in order to save the lives of the patients. He thinks we should operate as early as possible without precipitation.

Dr. Brooks H. Wells, of New York, said that while in cases of ectopic pregnancy 95% may get well without operation, and that 5% will surely die without being operated on, the best results can be obtained by operation done just as soon as the diagnosis can be made. Those women who make the quickest and smoothest convalescence, and who have the fewest symptoms of trouble afterwards, are the ones who are operated on promptly. Furthermore, the mortality rate in those operated on quickly is much smaller than in those that have been in " cold storage " for days or sometimes weeks.

Dr. Joseph Taber Johnson, of Washington, D. C., said it is a backward step to wait and see whether these patients are going to bleed again or not. The proper thing to do in these cases of emergency surgery, provided a skillful operator is at hand and the surroundings are good, is to operate, and the sooner the ruptured tube is removed the better. Even should hematocele form, there is no assurance that it may not become infected.

Dr. William Gardner, of Montreal, believes that the majority of cases should be operated on, but the question arises, should the gynecologist wait or not in the face of the symptoms presented or operate immediately. He thinks Professor Pfannenstiel sounded the keynote when he said we may operate, but without precipitation. He would wait in certain cases, but watch them carefully, before deciding to operate.

THE HEART IN SHOCK.

Dr. Eugene Boise, of Grand Rapids, Mich., said it is generally conceded that the element of danger in shock is the very low blood pressure. It is also generally believed that the cause of this low blood pressure is vasomotor paralysis. Dr. George W. Crile adopts this theory as the result of a large number of experiments. The author thinks that the conclusion of Dr. Crile is erroneous. Dr. Howell speaks of a cardiac shock in which the low blood pressure is due to cardio-inhibitory exhaustion. Dr. Yandell Henderson thinks that shock is due to a deficiency of carbon dioxide in the blood, and that when death occurs suddenly in shock the heart is tetanically contracted. A series of experiments have apparently demonstrated that in shock the heart is in a state of tonic contraction, the degree of which varies with the degree of shock, and that treatment directed to the relief of this condition is the correct treatment for shock.

PERNICIOUS ANEMIA IN PREGNANCY.

Dr. Palmer Findley, of Omaha, Neb., in a paper on this subject, reviewed the literature and then presented a clinical report of a case with the post-mortem findings in both the mother and child.

As the result of his observations, he presented the following summary: (1) Pregnancy and the puerperium exercise a favorable influence on the development of pernicious anemia. (2) Women are more liable to pernicious anemia during pregnancy and the puerperium than at any other time. (3) There is no satisfactory explanation for the effect of pregnancy upon the development of pernicious anemia. Frequent child-bearing, prolonged lactation, overwork and malnutrition are predisposing factors. (4) There is a remarkable uniformity in the clinical phenomena and post-mortem findings. (5) The onset of anemia is usually in the latter half of pregnancy. (6) The diagnosis is not possible at the onset but is later determined by exclusion of other possible forms of anemia, by blood examination, fatal termination, and finally by post-mortem examination. (7) The child usually dies in utero or shortly after birth and has never been observed to show pernicious anemia. Spontaneous interruption of pregnancy is the rule. (8) In all well-established cases the disease has proved fatal.

DISCUSSION.

Dr. Richard C. Norris, of Philadelphia, has seen only 1 case of pernicious anemia in over 3,000 consecutive deliveries. This woman entered the hospital a few days before she was delivered with only 12% hemoglobin. A characteristic of labor was a refusal of the patient's blood to clot. There was considerable oozing from the uterine cavity, which persisted so as to require intra-uterine packing and the use of adrenalin to control hemorrhage. The woman, however, finally died from this persistent oozing from the uterine cavity.

SUGGESTIONS IN TEACHING GYNECOLOGY.

Dr. John A. Sampson, of Albany, N. Y., demonstrated special mechanical charts as an aid in this work, and said that three phases in the study of any of the clinical branches of medicine naturally suggested themselves. First, the study of each disease as a science, namely, its cause, the changes in anatomy in its different stages and, particularly important, the explanation of its symptomatology. Second, the classification of symptoms and the study of the various causes of each symptom and how these causes may be differentiated. Third, the art or technic of the clinical branch of medicine, namely, taking of the history, physical examination, diagnosis and treatment, and importance of clinical experience on the part of the student in the dispensaries, wards and hospitals, or in private practice. The conditions caused by each disease, which are illustrated problems, the student should attempt to solve from his knowledge of normal anatomy, normal physiology, etc., instead of memorizing data obtained from lectures or textbooks. In the solution of these problems questions are asked and the answers of the student corrected when necessary and supplemented by information which he cannot be expected to reason out. Various means may be employed, such as drawings, models, actual specimens removed at operation or at post-mortem, using whichever means are best adapted to the special subject under consideration. Mechanical charts are of great value in this work.

HOSPITAL GYNECOLOGY.

Dr. Robert L. Dickinson, of Brooklyn, N. Y., spoke of gynecology as a separate department, and described the character of hospital as affecting this. He spoke of the working adjustments between surgery and gynecology, and of the relations between assistants and house staff. He believes that there should be uniformity in technic where the operators are numerous, and thinks there should be also standard schedules of preparation, of outfit, of after-care, etc. He spoke of the methods of exhibiting or guarding the histories of cases in wards, and also discussed the question of files, indexing, the inter-relation of hospital and dispensary.

THE SURGICAL TREATMENT OF PROLAPSE OF THE UTERUS AND BLADDER.

Dr. I. S. Stone, of Washington, D. C., read a paper on this subject.

ENDOMETRITIS EXFOLIATIVA.

Dr. Hugo Ehrenfest, of St. Louis, Mo., contributed a paper with this title.

OPERATIONS FOR RELIEF OF PELVIC DISEASES IN INSANE WOMEN, INCLUDING 411 PATIENTS; SECOND REPORT.

Dr. Leroy Broun, of New York, described the operations performed during the last five years at the Manhattan State Hospital. The pathological conditions existing were alone considered; no account was taken of the mental state of the patients. The character of the mental disturbance was, in the majority of instances, unfavorable, in that the chance of a mental recovery was not good. Such patients, however, have an equal right to be given physicial relief when needed. The class of patients receiving marked stimulus to mental recovery was of the group of insanity known as maniac depression. The best results are obtained when operations are undertaken before the psychosis becomes a fixed habit. The character of the operation does not appear to have any relation to the mental benefit resulting. Thirty-two patients have shown a much more rapid progress from a mental standpoint after the operations than before, resulting eventually in a recovery. This improvement in the psychiatric state following the operation is due to the improved physical condition of the patient.

SYMPOSIUM: INTRA-PELVIC (SUBPUBIC) VS. ABDOMINAL METHOD OF DEALING WITH MECHANICAL OBSTRUCTION TO DELIVERY IN CASES OF CONFINEMENT.

Dr. Richard C. Norris, of Philadelphia, said that the modern results of elective section justify the extension of the limit of the absolute indication. He pointed out what this limit should be and spoke of the degrees of relative disproportion which exist and which furnish debatable ground. He referred to the factors to be studied before or during labor that promise spontaneous delivery or safe operative assistance. The actual test of labor should not be abandoned. He spoke of the methods and value of fetometry, of pelvimetry and of studies to determine the character of membranes, of cervix and of uterine energy. The status and methods of induction of premature labor for minor degrees of relative disproportion were described and personal statistics given. He spoke of the value and limitations of forceps and version. He referred to the circumstances which justify section of the pubic bone. Pubiotomy is preferable to symphyseotomy. The accidents of pubiotomy are best avoided by the most approved technic and by skilled operative delivery, which includes complete preliminary dilatation of the birth canal.

Dr. Edward Reynolds, of Boston, said that (1) in the absence of mechanical difficulties, intra-pelvic methods are always preferable. (2) Throughout obstetrics a low maternal mortality is the most important of all considerations, and this should determine the choice whenever it is markedly variable as between the two methods. (3) Comparison of maternal mortalities under differing conditions. (4) Similar comparison of fetal mortalities, and maternal and fetal morbidities when maternal mortalities are equal. (5) Difficult cases, in which the necessity for some form of operative precedure can be safely predicted in advance, should be submitted to primary Cesarean section. (6) Limitations of the possibilities of such prediction.

Dr. Egbert H. Grandin, of New York, said that under relative indication the operation of election in hospital practice and the ideal operation in both hospital and private practice is the elective Cesarean section by the abdomen. Careful consideration of these instances from every standpoint shows that such section, other things being equal, carries less risk to the woman and better subserves, certainly as well, as alternate operations.

Symphyseotomy and pubiotomy from the standpoint of the child were discussed. Under absolute indication the choice lies between embryotomy of the living fetus and abdominal Cesarean section. Both the Dührssen operation and the vaginal operation are of the emergency type and concern not so much dystocia as conditions calling for rapid delivery, such as the acute toxemias, and, very rarely, placenta previa. The Dührssen operation is alone allowable where the vaginal portion of the cervix has emerged into the lower uterine zone. The vaginal Cesarian section is alone allowable where the vaginal portion of the cervix is intact. It stands to reason that where the pelvis is too small for the given child or the child is too large for the given pelvis, both the Dührssen and the vaginal section are contra-indicated, except as measures precedent to embryotomy.

Dr. Barton Cooke Hirst, of Philadelphia, made a plea for conservatism in restoring Cesarean section. A large number of these operations are only justifiable in clinics to which the patients are transported without previous medical observation. The indication of labor two or four weeks before term obviates the necessity for the majority of Cesarean sections and should be resorted to more frequently.

Dr. A. Lapthorn Smith, of Montreal, said that the operation of Cesarean section has been so perfected that when performed by an experienced abdominal surgeon it has now hardly any higher death-rate for mother and child than normal labor. This cannot be said of prolonged application of forceps, nor of even the best of the subpubic methods.

THE PRESIDENT'S ADDRESS.

President Baldy in his address discussed the general policies, advances and failures of the past, and the duties of the future. The objects of the society are of a mixed character, scientific and social. The social side brings men together, gives opportunity for personal contact and the estimate of personal worth, and no better way exists of discovering an individual's professional capacity than to become acquainted with his methods of thought, accuracy of observation and process of reasoning as applied to those every-day affairs with which every one, scientist or layman, is equally well acquainted and of which he is equally competent to judge.

In looking over the field of endeavor for the past year he finds nothing new advanced nor any startling improvement on the old. After a decade of obstetrical and gynecological activity, unprecedented in any branch of medicine, he said that we seem like wise men to be resting, retrospecting, and putting our house in perfect order before proceeding further. Notwithstanding this, the signs for the future are bright, and when it is noted on the one hand the activity of the obstetrical world in that great undertaking, the prevention of blindness at the beginning of life, and the activity of the gynecological world in the fight against that greatest of all scourges of middle life, cancer, we may look with complacency upon the criticism which has predicted the end of gynecology as a specialty.

President Baldy then discussed the general administration of anesthetics as performed to-day, and expressed the hope that a salaried anesthetizer would be placed in each and every hospital in the land, with a salary of sufficient size to attract to the service men or women of proper intelligence. Many brainy women, fully capable of being trained to give anesthetics, have entered the nursing profession, and it is from this source one must look for a solution of the difficulties. Women are being tried and are proving most satisfactory as anesthetists, and it will be a bright day of advance in the technic of the operating-room when their services are more generally adopted.

THE DEVELOPMENT OF THE TECHNIC OF GYNECOLOGICAL OPERATIONS.

Dr. August Martin, of Berlin, Germany, presented a review of the work done by gynecologists in the past fifty years, and said the basis of the increasing value of gynecological operations is the advance in anatomy, normal and pathological, and in diagnosis. Asepsis insures surgical results. He said there are two routes in the front of discussions to-day, the abdominal and the vaginal, and he described the indications and limitations of each.

ABDOMINAL AND VAGINAL CELIOTOMY FOR GYNECOLOGICAL OPERATIONS; THEIR INDICATIONS AND TECHNICS.

Dr. F. Pfannenstiel, of Kiel, Germany, followed with a paper on this subject in which he pointed out that either method is available for the majority of gynecological operations. The route which gives primarily and secondarily the best changes of life and health for the patient is to be preferred. In all intraperitoneal procedures the best chances are given by abdominal celiotomy, as it affords the better opportunity for either radical or conservative work. In aseptic cases, tumors, extra-uterine pregnancy, chronic inflammations, malformations, etc., the abdominal route is preferable. In septic cases, when the indications are that the infectious matter can be completely removed, the vaginal route is preferred, unless a complete view of the whole operative field and its surroundings is necessary. Except in early invasion of the cervix, all cases of cancer are better treated by the abdominal route; also when involvement of the appendix is suspected. Vaginal operation accomplishes most in all cases of prolapsus or descensus (genitoptosis) and movable retro-uterine displacements. Here neither suspension nor the Alexander operation with or without colporrhaphy is permanent. Anterior and posterior vaginal celiotomy are used, sometimes the one, sometimes the other, and if necessary, both.

The author then pointed out the advantages of the Pfannenstiel transverse abdominal incision.

VERTICAL AND HORIZONTAL AMPUTATION OF THE UTERUS.

Dr. Howard A. Kelly, of Baltimore, said that supravaginal hysterectomy in women under forty is too radical if it can be avoided. He spoke of subsection of the body of the uterus as being a better plan, retaining the uterine mucosa, cutting the flow down to normal, and preserving the function of menstruation. He then described the methods of vertical and horizontal subsection of the uterus.

SIX CASES OF CESAREAN SECTION NECESSITATED BY A PREVIOUS VENTROFIXATION.

Dr. Edwin B. Cragin, of New York, said that the fact that dystocia following ventrofixation should occur six times in the experience of one man and be so marked as absolutely to indicate Cesarean section, is sufficient evidence of the frequency of this sequel to the operation. As these fixation operations were all performed by different operators, the personal equation is eliminated. In spite of attention being called to the possibility of this unfortunate sequel to two ventrofixations, ventrosuspension is still quite frequently performed. An intended ventrosuspension may become a ventrofixation by accidental wound infection. A ventrosuspension which allowed an easy labor with a febrile puerperium in the first post-operative confinement may become ventrofixation and demand a Cesarean section for the next delivery, as occurred in the last of this series. During the child-bearing age, ventrofixation is not a safe operation for posterior displacement of the uterus.

IS PUBIOTOMY A JUSTIFIABLE OPERATION?

Dr. J. Whitridge Williams, of Baltimore, stated that in 13 operations performed by the author or his assistants there were no maternal deaths, only one woman being seriously sick. All began to walk by the end of the third week and were dismissed in good condition less than one week later. In one third of the cases there was permanent mobility between the cut ends of the bone. This did not interfere with locomotion, and possibly played a part in permitting subsequent spontaneous delivery in one patient. The operation is contra-indicated when the conjugata vera measures 7 cem. or less, and consequently does not enter into competition with Cesarean section, except that at the uppermost limit of the classical indication. It is particularly applicable to the "border line" cases, as it affords a safe method of delivery after subjecting the patient to the test of several hours in the second stage, whereas the mortality of Cesarean section rises steadily with each hour elapsing after the onset of labor. If pubiotomy fulfills its present promise, it should entirely do away with the induction of premature labor in the treatment of contracted pelves.

PRESSURE CONDITIONS WITHIN THE ABDOMEN.

Dr. Richard R. Smith, of Grand Rapids, Mich., read a paper on this subject, in which he speaks of the importance and desirability of greater accuracy in the application of principles and the knowledge that has been obtained. Obstacles attending experimental work are great, but all real advance in the subject has been obtained only in this way. He then describes the conditions in the abdomen with which we have to deal. Following this comes a discussion of the various components of pressure, and he ends with a brief résumé as follows:

1. Atmosphere pressure within and without the abdomen is almost exactly balanced, any variations at any point being caused by factors to be enumerated. There is no special universal positive pressure which has so frequently been assumed. Physiological increase or decrease of volume is attended by insignificant or no changes in pressure; the balance is practically maintained. A marked increase of volume from pathological conditions often takes place without disturbing the balance; this varies in different subjects.
2. Hydrostatic pressure at any point within the abdomen varies with the position of the body and the depth of the superimposed organs.
3. Negative pressure at uppermost points is possible under certain conditions where the walls of such uppermost points are rigid. In the upper abdomen in the upright position a negative pressure may exist which has more or less to do with the support of the viscera.
4. Respiration causes small waves of pressure.
5. Coughing, sneezing, defecation, labor and many movements of the body cause a very marked increase of intra-abdominal pressure by contraction of the muscles of the abdominal walls. Such pressure is transmitted in all directions and without diminution to every part of the contents and interior of the abdomen.
6. The facts as brought out in the paper should be applied with greater accuracy to the problems of gynecology and obstetrics than in the past.

The following papers were also read: "The Condition of the Mucosa in Cases of Uterine Myomata," by Dr. Thomas Cullen, of Baltimore; "The Surgical Treatment of Prolapse of the Uterus and Bladder," by Dr. I. S. Stone, of Washington, D. C.; "Endometritis Exfoliativa," by Dr. Hugo Ehrenfest, of St. Louis, Mo.

OFFICERS ELECTED.

The following officers were elected for the ensuing year: President, Dr. J. Riddle Goffe, of New York; First Vice-President, Dr. Howard A. Kelly, of Baltimore; Second Vice-President, Dr. Malcolm McLean, of New York; Treasurer, Dr. J. Wesley Bovee, of Washington, D. C.; Secretary, Dr. Leroy Broun, of New York. Members of the Council, Dr. George Tucker Harrison and Dr. J. Montgomery Baldy, Philadelphia.

New York was selected as the place for holding the next annual meeting.

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RHODE ISLAND MEDICAL SOCIETY.

The ninety-seventh annual meeting of the Rhode Island Medical Society was held in Providence, on Tuesday, May 26, beginning at 4 o'clock p.m.

The House of Delegates elected the following officers for the ensuing year:

President, Dr. Frank B. Fuller, Pawtucket; First Vice-President, Dr. Eugene Kingman, Providence; Second Vice-President, Dr. Augustin A. Mann, Central Falls; Treasurer, Dr. George S. Mathews, Providence; Secretary, Dr. Stephen A. Welch, Providence. Committee of Arrangements, Drs. J. B. Ferguson, F. Burdick, and P. Williams; Committee on Library, Drs. H. G. Miller, G. D. Hersey, G. L. Collins, F. L. Day and H. G. Partridge; Committee on Publication, Drs. G. D. Hersey, C. M. Godding, G. T. Swarts; Curator: W. J. McCaw; Committee on Necrology, Drs. H. C. Putnam, H. B. Harvey, L. F. C. Garvin; Committee on Legislation, Drs. G. T. Swarts, W. F. Gleason, W. L. Munro, the President and Secretary, *ex-officio*. Auditor for two years, Dr. F. T. Fulton.

The following committees were appointed by the president: On Building, Drs. H. G. Miller, J. W. Mitchell, R. F. Noyes, F. H. Peckham, F. T. Rogers; on Medical Education of the American Medical Association for three years, Dr. G. T. Swarts; on National Legislation of the American Medical Association, Dr. G. T. Swarts; Ways and Means, Drs. G. Alder Blumer, J. M. Peters and H. DeWolf.

The annual report of the secretary showed that the society had 386 members. Of these 345 were resident fellows, 29 non-resident and 12 honorary. The annual report of the Library Committee by Dr. H. G. Miller, chairman, showed that the books in the library now numbered 22,000. During the year 371 bound volumes were added, 278 reprints and 226 pamphlets. The largest number, 209, were the gift of Dr. R. F. Noyes; 111 were from the library of Dr. Ely. During the days from June 1, 1907, to May 12, 1898, there were 1,173 visitors to the library.

PRIZE FUND REPORTS.

The trustees of the Fiske prize fund reported through Dr. DeWolf that a prize of $200 had been awarded to Dr. Frank R. Vale, of Washington, D. C., for his essay on the subject, "Has Surgical Treatment Lessened the Mortality from Appendicitis?"

For 1909 a prize of $200 is offered for the best essay on the subject, "The Mode of Infection and the Duration of the Infectious Period in Scarlet Fever."

For 1910 a prize of $200 is offered for the best essay on the subject, "The Classification and Treatment of the Diseases Commonly Known as Rheumatism."

The trustees of the Chase-Wiggin fund announced that a prize of $75 was awarded to Dr. J. M. French, of Milford, Mass., for his essay on "Tea and Coffee as Drinks."

For the year 1909 a prize of $75 is offered for the best popular essay on the subject, "The Nature of Alcoholic or Intoxicating Drinks and Their Evil Effects on the Human System."

Dr. John P. Torrey, was presented as delegated from The Massachusetts Medical Society.

Dr. William McDonald, Jr., reported a case of brain tumor and exhibited the specimen. The tumor was a glioma and occupied nearly the whole of one hemisphere. In spite of the extensive destruction of the brain the patient remained rational for a long time.

Dr. Irving S. Cooke reported a case of diphtheria which involved the larynx and trachea. Antitoxin failed to relieve and preparations were made to operate when the child had a severe coughing spell and coughed up a long membrane which was a perfect cast of the trachea and primary bronchi and which on one side showed two extensions into secondary bronchi.

Dr. Nathaniel F. Gifford read a paper on "Actinomycosis." He briefly reviewed the subject and reported the first case to be presented to the society.

The patient was a male, fifty-six years of age, who had been accustomed to suck pieces of straw. When first seen the disease had made such progress in six weeks that the patient was unable to separate his jaws more than quarter of an inch. The right jaw and the tissues below presented an irregular tumor, size of a small orange and on its surface were several soft and inflamed spots. These and some other small abscesses which formed were opened and drained. Internally the iodide of potash was given and in about six months the man made an excellent recovery and has remained well now for some eighteen months. The fungus was shown under the microscope.

Dr. William F. Munroe read a paper on "The Health Problems of the Smaller Cities."

The president, Dr. Charles V. Chapin, delivered the annual address on the subject, "Some Sanitary Problems." He said, in part:

"Although much yet remains undone, much has already been accomplished. Among the sanitary successes of the last century have been the cleansing of cities, the providing of pure water, the removal of wastes, the scientific purification of water and sewage, the building of contagious disease hospitals, the substitution of effective inspection for burdensome and ineffective quarantine, an enormous reduction in the prevalence of typhoid fever and cholera, the development of bacteriology and micro-zoölogy, the demonstration of the parasitic nature of the infectious diseases, the determination of very many pathogenic organisms, the discovery of the transmission of disease by insects, the more efficient control of malaria, the stamping out of yellow fever, the restriction of plague, the discovery of curative and preventive sera, and the application of effective measures for the care of tuberculosis."

Among the unsolved problems, Dr. Chapin discussed, was whether pathogenic organisms can increase in numbers outside the body. Formerly nearly all were thought to do so. Now the evidence is very strong that outside sources of disease may be neglected.

Again we are as yet very ignorant as to the point of entrance of most disease germs.

"Typhoid fever is generally assumed to be a local disease of the intestines, but there is considerable evidence to show that it is essentially a blood infection. As yet we really know nothing about it. Nor do we know anything whatever about the point of entrance of the virus of smallpox, measles, whooping cough and scarlet fever."

Again, how is disease transmitted? Usually it has been said that disease is air-borne. This, however, is probably a factor of minor importance.

"It seems to be certain from a statistical study of scarlet fever and diphtheria in Providence during the last twenty years or more, that, given one infected family in a house, the disease does not spread to the other families in the house or to adjoining houses through the air."

Contagious diseases are being treated in wards near together or even in the same ward without cross transmission. Surgeons have gradually abandoned the idea that the air is the chief source of infection of wounds.

Bacteria die rapidly when dry or when exposed to light.

What is the importance of fomite infection? Is infection carried by furniture, toys and the like? Again the answer is no. Germs are rarely found on such articles. Things are infected mainly by contact and the infection must be recent to be capable of causing disease. The disuse of disinfection in Providence has resulted in no increase of diphtheria or other contagious diseases. The rate of prevalence is about the same as it is in the cities where disinfection is practiced.

Contact infection is common. The importance of individuals as carriers is being recognized. What to do with the well carriers is a problem.

Infection from food and drink has been pretty well worked out.

In two very important diseases, however, we know little. One is the transmission of tuberculosis in milk and the other the milk infection in infantile diarrhea. We do not know whether the infection is due to bacteria or to the products of bacterial activity in the milk. We do not know these hypothetical bacteria nor how they get into the milk.

The last method of transmission to be demonstrated is by insects acting either as hosts or as carriers. The rôle of carrier has yet to be worked out. It is possible but has not been demonstrated.

Referring to "bad air," the speaker said: "Floating dust, bacteria, solid animal matter, volatile organic substances, noxious gases, any or all of these may be considered as atmospheric impurities. As yet no poisonous substances have been isolated from expired air, no injurious gases are known. It is unpleasant to be in a 'close room,' but it is uncertain how much of this is due to odors, the heat and the humidity, and how much to the altered chemistry of the air. So, too, in regard to the fresh-air cure for consumption. No one doubts the reality of the cures, but who knows how they were brought about? Who has determined how much is due to rest, to regular habits, to diet, to sleep, to sunshine, or, finally, to the air itself?

"Until quite recently there was much talk about unhealthful adulteration and of food articles; condiments and liquors were supposed to be full of death-dealing ingredients and preserved with poisonous antiseptics. It is true that the use of antiseptics has been increasing and should be regulated, but even on this subject much that is unwarranted and alarming has been written. As regards most adulterations, they affect the pocket rather than health, and their prevention is an economic rather than a sanitary problem."

Investigate before spending public money or wasting private resources.

At 6.30 o'clock dinner was served. Dr. Donald Churchill presided as anniversary chairman, and speeches were made by Dr. Francis D. Donoghue, president of the Boston Society of Examining Physicians and Surgeons; William S. Murphy of the Boston *Globe*, and James Minnick, superintendent of the Providence Society for Organizing Charity.

Book Review.

Primitive Secret Societies. A Study in Early Politics and Religion. By Hutton Webster, Ph.D., Professor of Sociology and Anthropology in the University of Nebraska. New York: The Macmillan Company. 1908.

The volume before us is a careful study of ceremonials and secret societies found among savage and barbarous communities throughout the world. The data for the investigation was collected from Australia, Melanesia, Africa and North America. The significance of the material is as yet not fully determined, but this volume is an attempt which should be welcomed by students of sociology everywhere. The material appeared originally as a thesis for the doctorate in political science at Harvard University, and although greatly enlarged since then, this thesis forms the basis of the present work. Some of the matters discussed are: the men's house; the puberty institution; the secret rites; the power of the elders; the development of tribal societies; magical fraternities, and initiation ceremonies. Although the volume bears upon medical matters in but small measure, it should, nevertheless, be interesting to the broad-minded physician in the consideration of the social aspects of his profession.

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THE CLINICAL SURGEON.

As many of our readers are, no doubt, aware, several years ago a small national surgical society was projected and its membership filled under the name, "The Society of Clinical Surgery." The choice of this name doubtless indicates the desire on the part of its members to demonstrate the advances in the practical side of their art. The method adopted to accomplish this object has been to meet at stated intervals at various cities, the members from the city chosen offering the program, which has usually consisted rather of demonstrations than fixed papers. The significance of such a society as this, composed essentially of the leading surgeons of the younger generation, is not easily estimated. It cannot be questioned that very much may be accomplished by such an organization in developing the teaching and practice of surgery, which may hardly be attained by a more formal organization.

The last meeting of the society was held in Boston, with an attendance of thirty-two. A noteworthy feature of this meeting was an address, by invitation, from Dr. R. H. Fitz, whose well-known opinions regarding both the possibilities and the limitations of surgery added greatly to the interest of his remarks. After sketching in succinct fashion the earlier history of surgery in this community, he led up to a consideration of present-day tendencies in surgical work. He finds the unmistakable tendency of the times to be toward a more general use of surgical measures and consequently toward an increase of would-be surgeons. The general nihilistic attitude toward drug pharmacy has no doubt aided this movement. Surgical interference is impressive to the patient because of the directness of the relation between cause and effect. This fact, together with the ease of acquirement of sufficient technical skill and the liberality of the pecuniary reward, has led to the addition of many surgical practitioners who are often unfitted for the work by temperament, education and experience. Dr. Fitz found in such an organization as that of the Society of Clinical Surgery a possible check toward this overfilling of the ranks with incompetent men. In this connection he says:

"If the pathway to the ranks of the genuine surgeon is to be recognized as one not to be lightly trodden, the physician should be discouraged in the use of such surgical measures as can readily be taught and practiced. Every student should know some surgery, but the fault of surgical teaching as I see it is in undertaking to teach the surgery of the expert to him who is never to become more than a tyro."

The possibility is suggested that in the reorganization of therapeutics in our medical teaching it may be well to give surgical therapeutics, broadly considered, as distinct a place in the medical curriculum as is now given to medical therapeutics. In general, Dr. Fitz sees in the development of surgery along broad but conservative lines, as represented in the well-equipped clinical surgeon, a standard which all physicians should seek, and suggests that this young organization of clinical surgeons is particularly fitted to indicate how this standard may be attained.

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THE TREATMENT OF LEPROSY.

Tradition, no doubt, has much to do with the persistence in the popular mind of various conceptions regarding disease. In no affection is this more true than in the case of leprosy, which from Bible times on has been regarded by the laity as one of the most contagious and menacing diseases with which man may be afflicted. The notorious sufferings, for example, to which the mentally affected were subjected from early times down to a rather recent date has slowly given place to a rational treatment of this type of disease, although the results of early prejudice are still painfully manifest. The leper has been a peculiar sufferer in this respect, because of the supposed extreme contagiousness of his disease. It is not long ago that an unfortunate leper in this country was practically hounded to death because of the ignorance and prejudice of the various persons with whom he happened to come in contact. It need hardly be said here that the medical profession, or, at least, those among its number who have made a special study of the subject, no longer regard the danger of contagion as significant. Now that the cause is better understood, it is naturally an easier matter to guard against contagion, and there seems to be no reason why, under proper hygienic conditions, a spread of the disease from person to person should continue to occur. On the other hand, it is certainly unwise in the present state of our knowledge in any way to foster its spread through granting too much liberty to those who may be afflicted with it. While it is perfectly true that under watchful care contagion may be prevented, it is none the less true that if lepers are allowed at large, while the disease is still active, vigilance on their part is almost sure to be relaxed with consequences which naturally are not pleasant to contemplate.

We have read with interest a report of an institution in Louisiana, in which a form of hygienic treatment is said to be adopted, which may lead to what is claimed to be the cure and which benefits many. This institution is said to have been in existence for thirteen years, and is conducted by six Sisters of Charity, none of whom have become infected with the disease. Much freedom is given the inmates and no particular efforts made to prevent their escape. There has been little difficulty in this latter regard, but it is nevertheless recognized that every effort should be made to avoid further escapes. The best possible sanitary conditions are provided, together with such skilled medical treatment as they may require, and by these means excellent results are said to have been obtained.

The significance of this humane attempt is manifest, and not the least important element in it is the education which it is likely to bring to the public regarding the dangers of the disease. An ocular demonstration that lepers need not necessarily be regarded as prisoners and outcasts should be of no little value in leading to a more sane and rational attitude of the public toward this most unfortunate class of sufferers.

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THE FOURTH OF JULY.

It is not likely that the present method of celebrating the Fourth of July will be immediately revolutionized. There is, however, a growing feeling on the part of the authorities, which it is to be hoped is gradually spreading to the people at large, that, although noise must be permitted to a certain extent, its varieties may be in a measure controlled, and the various contrivances which produce it be regulated, as far as possible, with a view to safety. There is already a regulation in this city that no noise shall be made at certain hours, that certain dangerous explosives be not permitted, and that horns of a certain sort be prohibited. All this marks a step in progress and should do something toward putting a check to the lawlessness which is too apt to prevail on this day of universal celebration. We have frequently called attention to the positive dangers in the production of disease, notably tetanus, through the careless use of toy pistols and other contrivances designed particularly for the day. There has, within the past few years, been noticeable a definite decrease in the number of such mishaps, partly, it is to be presumed, due to the more stringent regulations now in force, and partly, we should like to believe, to an increase of intelligence on the part of the people regarding the dangers of certain methods of celebration. However this may be, we look forward with confidence to a more rational observance of the day, not devoid of noise, which, after all, appears to be an absolute essential of enjoyment among the young, and also among a large number of their elders, but controlled in such a way that the dangers may be reduced to a minimum without in any way impairing the sense of patriotism which the day is supposed to excite.

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THE NERVOUS SYSTEM IN THE TRAINING OF ATHLETES.

It is not to be questioned by those who have followed the course of athletic training, particularly for the leading university contests, that a far greater degree of skill is expended on the physical training of the candidates than upon an estimation of their nervous capacity. The men having this training in charge are admirably adapted through experience and personal participation in previous athletic contests to determine the physical condition of applicants for the various athletic teams. It is certainly apparent that this aspect of training has reached a very considerable degree of perfection. It is equally apparent to the outside observer that no really systematic attention by skilled persons is given to the mental attitude of candidates for athletic honors or to their general reaction to various nervous stimuli. We are quite aware that this side of the question is not wholly neglected, that the popular term "going fine" is meant to express nervous rather than physical instability, and that any skilled athletic trainer must recognize the ordinary nervous reactions of poor sleep, poor appetite and similar conspicuous conditions. It is, however, our belief, that this is not enough and that the athletes of the future will receive attention in the details of their nervous reactions in the same sense that they now receive attention in the details of their muscular development. The neglect of this important element in training is undoubtedly responsible for many of the unexpected failures to win with which the history of great athletic contests is filled. In the recent boat race, for example, between our two leading universities, it is evident that the failure of the losing crew to make any showing in the contest was due only in part to lack of physical strength, but rather to a series of peculiar nervous conditions about which we unfortunately know comparatively little, but which certainly demand more study on the part of those having charge of athletics if complete justice is to be done to participants in these contests of skill and endurance. We talk about the grit and determination of this and that aggregation of men, but we are far too vague, and, what is more, far vaguer than we need to be in our analysis of the conditions which bring about this so-called grit and determination. Much is said also of temperament as an asset of value to the athlete, or detriment, as the case may be, but here again we are talking in generalities rather than in exact terms. We trust that a broader conception of the significance of training will later lead to definite experimental work on the side of the mental state of those participating in athletic contests. We feel confident that revelations of significance would result.

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MEDICAL NOTES.

Centenarians. — Henry Miller, of Lexington, Ky., has recently died at the reputed age of one hundred and four years.

Mrs. Emily Huntley Humes, of Hartford, Conn., has died at the age of one hundred and two. She has failed gradually since last September, when she had a paralytic attack.

Cholera in the Philippines. — It is reported from Manila that cholera has appeared among the troops at Camp Gregg. Approximately one hundred cases were reported in one day, of which more than half proved fatal. This mortality occurred, however, on the Island of Luzon and does not refer to the United States troops.

Donation to a Hospital. — It is reported that Mrs. Whitelaw Reid has given $10,000 to the Red Cross Hospital of the town of San Mateo. This hospital was organized by Mrs. Reid and was completed and formally dedicated last year. The present gift is to aid the directors of the hospital in adding a wing to the present building.

Dr. Osler a Possible Lord Rector. — It is announced that Dr. William Osler, Regius Professor of Medicine at Oxford University, has allowed his name to be used as a non-party candidate for the post of Lord Rector of the University of Edinburgh. He is said to be the first physician ever nominated for this office, and is warmly supported by the medical students. His opponents are Winston Churchill, President of the Board of Trade, and George Wyndham, ex-Chief Secretary for Ireland.

Honors for Physicians. — The degree of D.Sc. was conferred upon Dr. William Crawford Gorgas, chief sanitary officer of the Isthmian Canal Zone and president-elect of the American Medical Association, by Harvard University at its annual commencement.

Dr. James Ewing Mears, of the Jefferson Medical College of Philadelphia, received the degree of LL.D. from Trinity College, of which he was a member in the class of '58.

The Edward N. Gibbs Memorial Prize. — The Edward N. Gibbs memorial prize to the amount of one thousand dollars on the subject, "The Etiology, Pathology and Treatment of the Diseases of the Kidney," has been announced by the New York Academy of Medicine. The essays for this prize must be presented on or before Oct. 1, 1909; in its award much stress will be laid upon originality.

Continuance of the "Index Medicus." — It has been decided by the Executive Committee of the Carnegie Institution of Washington to continue the publication of the *Index Medicus* during 1909 at a subscription rate of eight dollars a volume. The hope that this admirable index would be liberally supported by the medical profession has not been gratified, which accounts for the increased subscription rate of three dollars. By this means the index may at least be published for another year, with the hope that the present number of subscribers may not be materially reduced, in spite of the increased cost.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, June 30, 1908, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 47, scarlatina 28, typhoid fever 18, measles 186, smallpox 0, tuberculosis 46, cerebrospinal meningitis 0.

The death-rate of the reported deaths for the week ending June 30, 1908, was 13.73.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, June 27, 1908, was 168, against 214 the corresponding week of last year, showing a decrease of 46 deaths and making the death-rate for the week 14.33. Of this number 76 were males and 92 were females; 162 were white and 4 colored; 110 were born in the United States, 54 in foreign countries and 4 unknown; 31 were of American parentage, 106 of foreign parentage and 31 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 45 cases and 3 deaths; scarlatina, 42 cases and 2 deaths; typhoid fever, 11 cases and 0 deaths; measles, 205 cases and 2 deaths; tuberculosis, 66 cases and 28 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 16, whooping cough 0, heart disease 23, bronchitis 1 and marasmus 3. There were 10 deaths from violent causes. The number of children who died under one year was 27; the number under five years 46. The number of persons who died over sixty years of age was 49. The deaths in public institutions were 48.

Cerebrospinal meningitis 2 cases reported, 1 death.

Dr. C. S. Minot Honored. — Dr. C. S. Minot, Professor of Comparative Anatomy at the Harvard Medical School, has been appointed corresponding member of the Physico-Medical Society of Vienna, on the occasion of the one hundredth anniversary of its foundation. Dr. J. Loeb, of the University of California, has been similarly honored.

NEW YORK.

Demonstration of Operating Cabinet. — As the result of a successful demonstration of his operating cabinet which Professor Sauerbruck, of Marburg, Germany, recently gave at the Rockefeller Institute after his return from the meeting of the American Medical Association in Chicago, it is stated that the authorities of the institute have determined to install such a cabinet there, which will be of much larger dimensions than the one employed on that occasion. In the demonstration referred to, which was made in the presence of a number of prominent medical men, a dog was operated upon by two surgeons within the cabinet.

Sanitation of Present Military Camp. — The present large military camp at Pine Plains, N. Y., for regular and militia troops, would appear to be a model one as regards sanitation. This is largely due to the efficient and painstaking work of Major Charles E. Woodruff, M.D., of Fort Wadsworth, New York Harbor. The site was very carefully selected, and every modern device is employed to keep the camp clean and the men healthy. Thus a profusion of shower baths has been provided everywhere, and the strictest efforts are made to convince the troops that one of the soldier's main duties is to maintain cleanliness of his person, his clothing, his equipment and his surroundings. In reply to an inquiry as to how the admirable conditions prevailing had been attained, Major Woodruff is reported as saying, "There are no odors, no flies, indeed, nothing offensive in this camp, for the crematory has completely solved the matter of disposal of waste, which in the past has been an intolerable nuisance. Past experiences show that every volunteer regiment brings typhoid fever to camp with it, and no chances are taken with the early cases which are sure to be in every such camp."

New Water Supply. — At its meeting on June 26 the Board of Estimate and Apportionment gave its approval of the plans of a proposed new water supply for the city of New York from Suffolk County, on Long Island, involving the expenditure of some $47,000,000. The supply is to be developed from underground sources by means of wells of 100 to 200 feet in depth, and it is claimed by the engineers that 250,000,000 gallons daily can be brought to Brooklyn by a conduit seventy-three miles long, ending near East Quogue, and a supplementary conduit of four miles, following the Peconic Valley. Within two years from the beginning of the work, it is stated, a supply of 50,000 gallons daily can be obtained. This Long Island system, which has yet to be considered by the State Board of Water Supply, is not designed to supplant, but to supplement the Catskill system, now in process of construction, and at this meeting the board voted the sum of $22,000,000 for the latter, making a total of $59,000,000 thus far granted; $1,619,000 was also appropriated to the Department of Charities for repairs, new steamboats, and on account of the new Bellevue Hospital, and $25,000 for the botanical gardens in Bronx Park.

Current Literature.

MEDICAL RECORD.

MAY 9, 1908.

1. ECCLES, R. G. *Darwinism and Diabetes.*
2. COLLINS, J. *Cerebellar Hemorrhage: Remarks on the Functions of the Cerebellum.*
3. ELY, L. W. *Report of Nine Cases of Fracture of the Carpal Scaphoid.*
4. DOWD, J. H. *The Pulse of the Nervous System.*
5. LEALE, M. *Some Considerations in the Management of Burns and Scalds in Infants and Children.*
6. GRAEF, C. *A Report of Fifty Cases Tested by the Calmette Ophthalmo-Reaction Test for Tuberculosis.*
7. FRANZE, P. C. *Success and Failure in Nauheim Cures.*

MAY 16, 1908.

1. *CONNER, L. A. *The Occurrence of Epileptiform Attacks in Diabetes Mellitus.*
2. *GOODMAN, C., AND WACHSMANN, S. *The Surgical Treatment of Alveolar Pulmonary Emphysema.*
3. BROWN, E. K. *A Plea for Stricter Prophylaxis and More Scientific Management of Obstetric Cases in Tenement House Practice.*
4. BRYANT, W. S. *Air Borne Infections, Their Mode of Entrance; Preventative, Abortive and Ameliorative Treatment.*
5. COBB, C. M. *The Problem which Confronts the Otologist in the Treatment of Chronic Catarrhal Deafness.*
6. STEVENSON, H. B. *Nitroglycerin in the Treatment of Neuritis.*

1. Conner reports two cases of the occurrence of epileptiform attacks in diabetes. He also gives references to and a synopsis of twelve other reported cases.

2. Goodman and Wachsmann report four cases of emphysema operated on by them by the method of Freund, with some modifications. The results have been very satisfactory. The patients have all done well, and experienced great relief from the treatment. The authors believe that the operation is not dangerous, and that cardiac insufficiency, asthma, chronic bronchitis and albuminuria are not necessarily contra-indications. The best results, however, are likely to follow when the operation is undertaken before complications have arisen. [W. B. R.]

THE ARCHIVES OF INTERNAL MEDICINE.

MAY, 1908.

1. *MARINE, D., AND WILLIAMS, W. W. *The Relation of Iodin to the Structure of the Thyroid Gland.*
2. OERTEL, H. *Lymphangitis and Perilymphangitis of the Liver in Their Relations to the Inflammation of the Organ.*
3. *GOODMAN, E. H. *Recent Advances in Our Knowledge of the Underlying Chemical Principles of Diabetic Acidosis.*
4. WHITMORE, E. R. *A Case of Infection with Schistosoma Japonicum in a Filipino.*
5. *IRONS, E. E. *The Treatment of Gonococcus Arthritis by Injections of Dead Gonococci, and the Clinical Reaction which Follows the Injections.*

1. Marine and Williams report on their study of the relation of iodine to the structure of the thyroid gland. They examined 113 dogs' thyroids. In determining the iodine content of the gland they used the method originally employed by Rabourdin, with some modifications. Their classification of the glands was made strictly on the microscopic findings. They conclude: (1) The percentage of iodine varies with the amount of colloid in the several degrees of hyperplasia; the colloid varies inversely with the degree of thyroid hyperplasia. (2) The colloid gland (goiter) is the quiescent or normal state of a gland which has previously undergone hyperplasia, and obeys all the biologic laws of a normal gland. (3) In the classification of thyroid changes (excluding infection and neoplasms) four major groups must be recognized, viz., normal glands, colloid glands, hyperplastic glands and complications ingrafted on any of the preceding groups. (4) The ability of the thyroid to store iodine depends on the degree of glandular hyperplasia, rather than on the form or mode of administration of iodine. (5) The optimum therapeutic effects of iodine on the thyroid gland are only obtained with doses vastly smaller than those usually employed. (6) The percentage of iodine which a thyroid may contain is variable, but the minimal percentage necessary for the maintenance of normal gland structure is quite constant. (7) Commercially desiccated thyroid has a very inconstant iodine content and therefore has a variable physiologic activity and therapeutic value. (8) The problems of human goiter, both anatomically and chemically, should be investigated along lines similar to those adopted for the dog.

3. Goodman gives a complete summary of the recent advances in our knowledge of the underlying chemical principles of diabetic acidosis.

5. Irons bases his conclusions on forty cases of gonococcus injection, including 31 cases of arthritis. The results so far seem to indicate that in certain cases of gonococcus arthritis recovery can be hastened by the injection of dead gonococci. No harm has been seen to follow the injection, and it is possible that the use of larger doses will be found desirable in some cases. The treatment should be carried on in conjunction with other general measures, such as rest, aspiration of joints distended with fluid, massage of the prostate and other surgical and general hygienic treatment. The reliability of the clinical gonococcus reaction as a diagnostic procedure will also be determined only after many tests.

[W. B. R.]

JOURNAL OF INFECTIOUS DISEASES.

MARCH 30, 1908.

1. *ANDERSON, JOHN T. *The Frequency of Tubercle Bacilli in the Market Milk of the City of Washington.*
2. FORD, W. W. *The Pathology of Amanita Phalloides Intoxication.*
3. *HAMILTON, A. *Gonorrheal Vulvovaginitis in Children.*
4. *HAMILTON, A., AND COOKE, J. M. *Inoculation Treatment of Vulvovaginitis in Children.*
5. GOODMAN, H. M. *On the Leucocytotoxins of Normal Serum.*
6. *GOODMAN, H. M. *The Duration and Disappearance of Passive Diphtheria Immunity.*
7. *STEINHARDT, E., AND BANZHAF, E. J. *Is the Present Method of Standardizing Diphtheritic Serum According to Antitoxin Units Therapeutically Accurate?*
8. *STEINHARDT, E., AND BANZHAF, E. J. *The Relative Therapeutic Value of Antitoxic Globulin Solution and the Whole Serum from which It is Derived.*
9. RICKETTS, H. T., AND GOMEZ, L. *Studies on Immunity in Rocky Mountain Spotted Fever.*
10. CAULFIELD, A. H. *On the Activation of Opsonins in Heated Serum.*

1. Anderson examined the milk of one hundred and four dairies supplying Washington, D. C., and found that in approximately 11% the milk contained enough tubercle bacilli to be virulent to guinea pigs. He gives an account of his method of work and states the reasons for his belief that tubercle bacilli in milk are even more common than his figures indicate. Whether the milk when secreted contained tubercle bacilli, or whether they were acquired from the feces of the animals, it was impossible to say; but in either case the use of the tuberculin test in the cattle would eliminate the chances for infection.

3. The author reports an epidemic of 82 cases of gonorrheal vulvovaginitis occurring in a period of five months. During that time 16 cases entered the hospital with slight vulvovaginal discharge and 66 cases resulted. The important points in the history of this hospital epidemic were the apparent predisposition to gonorrheal infection caused by scarlet fever; the fact that no girl over thirteen years of age was infected; the total absence of Koplik's non-specific purulent vaginitis and the fact that the infection was introduced into the hospital by children with vaginal discharges which were apparently non-gonorrheal.

4. The authors base their conclusions on observation of sixty acute and seven chronic cases of gonorrhea in little girls. Their conclusions are as follows: (1) The opsonic index is below normal in chronic gonorrheal vaginitis and in acute vaginitis during the first week. (2) The index usually rises later in the cases which are recovering and remains more or less persistently low in cases which do not improve or improve slowly. (3) It is sometimes possible to raise the opsonic index to the gonococcus by

injection of dead gonococci; when this occurs an improvement in the clinical condition usually occurs also. (4) The acute cases inoculated with killed gonococci from strains which had been grown for several months on artificial media improved rather more rapidly than did control cases which received no injection of killed gonococci. (5) Better results were obtained by the use of strains which had been grown for a long period on artificial media than by the use of freshly isolated strains, and there appears to be no advantage in using the patients' own organisms. (6) While inoculation treatment does not produce a marked effect during the first weeks in acute cases, it seems to shorten the later stages; in chronic cases its effect is more evident than in acute. (7) The substitution of inoculation therapy for local treatment in little girls presents some decided advantages, especially in chronic cases. (8) It is desirable, though not absolutely essential, to control the inoculation by the patient's opsonic index.

6. Goodman has made a number of very carefully controlled experiments on the duration and disappearance of passive immunity, and he gives a clear account of his method of work. He finds, in passive immunization with diphtheria antitoxin, the degree of protection afforded is always in excess of the protection as calculated from the amount of antitoxin in the blood. The free antitoxin disappears from the blood before immunity is wholly lost by the organism. The duration of the protection conferred is practically independent of the quantity of antitoxin administered and of the age of the animal.

7 and 8. The authors have made a number of investigations on the therapeutic value of antitoxin to see whether the present method of standardizing antidiphtheritic serum accurately measures its therapeutic value. They believe this to be the case from their experiments and that antidiphtheritic serum contains no protective substances which play any rôle therapeutically except the antitoxin. Their experiments were undertaken to refute the work of various investigators to which they refer.

In their second paper they report a number of experiments on concentrated antitoxic serum, prepared according to Gibson's method, which prove that the therapeutic value of the plasma is not appreciably impaired through the process of eliminating albuminous and other non-antitoxic proteins, by the salting out methods employed and the final dialyzation of the concentrated product. [W. B. R.]

The Lancet.
May 16, 1908.

1. *Bonney, V. *Hunterian Lectures on the Connective Tissue in Carcinoma and in Certain Inflammatory States that Precede its Onset.*
2. *French, H. *Goulstonian Lectures on the Influence of Pregnancy upon Certain Medical Diseases and of Certain Medical Diseases upon Pregnancy.*
3. Stephenson, S. *Juvenile Tabes Dorsalis; Notes of Five Cases.*
4. Mummery, J. P. L. *A New Method of Restoring the Continuity of the Bowel in Cases of Excision of a Growth Low Down in the Sigmoid Flexure.*
5. Broadbent, J. F. H. *Diagnosis of Perforating and of Chronic Duodenal Ulcer.*
6. Mayland, A. E. *A Method of Administering Solids in Cases of Gastrostomy.*
7. Morton, R. *Electrical Treatment of Atonic Conditions of the Digestive System.*
8. Newman, E. A. R. *Note on Two Cases of Chronic Dysentery Treated with Forster's Antidysenteric Vaccine.*
9. Rose, A. *Note on a Case of Functional Paraplegia with Associated Paralysis of the Bladder.*

1. Bonney concludes that elastic tissue disappears in all areas of connective tissue proliferation, whether this be associated with a definite inflammatory state or with the connective tissue changes that are going on in a carcinomatous area. This disappearance is permanent. In certain conditions, however, of chronic irritation which fall short of producing cell proliferation in the connective tissues, yellow elastic tissue may be increased by the deposition of a granular elastin around the old fibers. This is seen in some simple irritative states, as well as in isolated areas in the stroma of carcinoma.

2. French, in the third of the Goulstonian lectures, considers the relation of pregnancy to certain fevers. He first takes up typhoid fever. He has not been able to find out that the pregnant woman suffers more from this disease than any one else. The child is generally infected, and is often born dead. He thinks that if the child has reached the viable age, artificial delivery should be performed at once. In smallpox the prognosis is rather worse when the woman is pregnant than at other times. The fact that the mother has had smallpox during pregnancy is no argument against vaccinating the child. Scarlet fever is apt to run a much more severe course and be far more fatal during pregnancy; measles, pertussis and diphtheria are not much influenced by pregnancy. Malaria, he thinks, is prone to very violent exacerbations during pregnancy. He does not think there is any objection to giving quinine beside the fact that quinine is sometimes taken in large doses to produce abortions; in his experience it does not work this way in malaria. Influenza is such a variable disease and epidemics are of such different types that it is impossible to lay down any definite rules. If pneumonia occurs early in pregnancy the prognosis as regards the mother is little if any worse than it is in other patients of the same age. Abortions will take place in about one third of the cases. If on the other hand pneumonia develops during the second half of pregnancy the mortality is greatly increased, both as regards the mother and the child. He considers Addison's disease and leukemia. Diabetes mellitus is by no means incompatible with pregnancy. Cases of moderate severity are not made materially worse, and there is no reason for interfering with pregnancy. Chorea is apt to be of an extremely fatal type. The severity of the disease is not to be judged so much by the violence of the choreic movements as it is by the presence or absence of pyrexia. [J. B. H.]

British Medical Journal.
May 16, 1908.

1. *Robson, A. W. M. *The Mitchell Banks Memorial Lecture on the Anatomy of the Pancreas in Relation to its Diseases.*
2. Thomas, J. L. *Fracture of the Patella Treated by Mobilizing the Lower Fragment.*
3. Searle, E. A. *A Case of Ectopic Gestation with Unusually Early Symptoms.*
4. Phillips, J. *A Method of Obtaining Rapid Healing of Acute Abscesses.*
5. Apthomas, G. *Tumor of the Orbit Removed without Enucleation and without Loss of Sight.*
6. Bletchly, G. P. *Appendicitis Complicated by Hepatic Abscesses.*
7. French, H. *The Goulstonian Lectures on the Influence of Pregnancy upon Certain Medical Diseases and of Certain Medical Diseases upon Pregnancy.*

1. Robson writes on the anatomy of the pancreas in relation to its diseases. He first goes over in some detail the histology of the normal pancreas and that of its inflammatory changes, with a classification of these latter. He then speaks of the topography of the organ, as affecting its surgery and emphasizes the fact that as it is practically in relation to every organ in the abdomen, it is almost impossible in any abdominal injury for it to be the only organ affected. He speaks of its relation to gastric ulcer, to stab and shot wounds, to gallstones, etc. He describes the common location of accessory pancreatic nodules and accessory pancreas, and the anatomy of the pancreas in relation to cystic disease, showing by charts the common location of such cysts. He describes the variation in the ducts of the pancreas in relation to its diseases. He believes catarrhal jaundice is usually due to catarrh of the pancreas and not to catarrh of the bile ducts. He goes into some detail on the subject of interstitial pancreatitis, its diagnosis by means of the Cammidge test; chronic pancreatitis and its relation to diabetes. In cases of disease of the pancreas associated with sugar in the urine, where the patient's condition is fair and the sugar is in small amounts, he believes that operation should be performed. For chronic pancreatitis he regards cholecystenterostomy as the operation of choice, and only in the absence of or contraction of the gall bladder, or in the case of unusual

difficulties from adhesions, or from the serious condition of the patient, would he counsel cholecystotomy or choledochotomy. He advises the use of the x-ray in the diagnosis of pancreatic lithiasis. [J. B. H.]

Deutsche Medizinische Wochenschrift, No. 16. April 16, 1908.

1. Joseph, E., and Schliep, L. *A Study of the Lymphatic Circulation as Influenced by Bier's Hyperemia.* (Continued article.)
2. *Pochhammer. *The Mode of Origin of Local Tetanus.*
3. Rotter. *The Pathogenesis and Operative Treatment of Prolapse of the Rectum.*
4. Hinz. *A Contribution to the Operative Treatment of Fractures Through and Near the Joints.*
5. Fraenckel, P., and Müller, R. *The Practical Significance of Barberio's Reaction for Sperma.*
6. * Crux. *Twelve Cases of Pneumonia in Children Treated with Römer's Pneumococcous Serum.*
7. Bauer, J. *On the Technic of the Serum Test for Syphilis.*

2. By the term local tetanus is understood the local spasm which occurs near the site of inoculation before the outbreak of general tetanus. It occurs chiefly in the smaller animals and is seldom seen in man. Pochhammer, working with rabbits, injected tetanus toxin into the sciatic nerve, thereby producing local followed by general tetanus. He excised the nerve later and transplanted different portions of it subcutaneously into mice. He found that the lower portion of the nerve always contained toxin in large amounts, whereas there was less in the upper portions. He concludes from this that the toxin is chemically combined with the myelin of the nerve sheath and is not transmitted from the periphery along the axis cylinders. He propounds the ingenious theory that the occurrence of spasms in tetanus is due to the absence of isolation between the sensory and motor fibers of the mixed nerves, owing to changes in the nerve sheath. The fact that injection of toxin into the facial nerve, which is purely a motor nerve, produces facial paralysis but not spasm, is in accord with this hypothesis. He believes that the production of immunity after repeated injections of tetanus toxin is due to the presence of lipoid substances in the blood, which have been derived from proliferation of the nerve sheaths. The injection of antitoxin obtained from such animals, therefore, will neutralize tetanus toxin which is circulating in the blood, by means of chemical combination, but cannot affect toxin which is already in combination with the nerve sheaths. This accounts for the great value of tetanus antitoxin as a prophylactic measure soon after the original inoculation and for its lack of effect after the symptoms of tetanus have set in.

6. This is a report of twelve cases of pneumonia in childhood treated with Römer's pneumococcous serum. Crux believes that the course of the disease was very favorably modified, but it should be remembered that pneumonia in childhood in general runs a favorable course, and that the duration is often shorter than in adults. A much larger series of observations will be necessary before this serum can be considered effective. [W. T.]

No. 17. April 23, 1908.

1. Rotter. *A New Operative Method for the Cure of Old Fractures of the Patella.*
2. *Kudlek, F. *On the Physiology of the Supramarginal Gyrus.*
3. Wolf, W. *The End Results of Tracheotomy.*
4. v. Eicken. *Bronchoscopy for Foreign Bodies.*
5. Horn, H. *A Lamp for Laryngoscopical Demonstrations, Etc.*
6. Riese. *On the Operation of Extensive Carcinoma of the Stomach.*
7. Kothe, R. *A Case of Torsion of the Omentum.*
8. Berkofsky, K. *The Ligation of the Ovarian Veins in Puerperal Septicemia.*
9. *Joseph, E., and Schliep, L. *A Study of the Lymphatic Circulation as Influenced by Bier's Hyperemia.* (Concluded.)

2. By a fortunate accident during trepanation, Kudlek produced a sharply localized lesion of the supramarginal gyrus, following which there ensued controlateral astereognosis, i. e., inability to recognize objects when placed in the hand, together with loss of the position sense and ataxia of the hand and arm, and loss of the sense of pressure. There was no loss of muscular power and only a very slight diminution of tactile sensibility in the parts affected. This and a similar case reported by Starr and McCosh are the only cases in the literature in which astereognosis has been associated with a sharply circumscribed lesion, and they seem to prove with certainty that muscle sense and the power to recognize the character of objects is located, at least for the hand and arm, in the supramarginal gyrus.

9. Joseph and Schliep from Bier's clinic report on experimental work on the effect of Bier's passive congestion. Injecting Congo red in suspension into rabbits, they found that the use of the rubber bandage kept all the substance within the congested territory. After long congestion in fact, there was a reversal of the lymph stream, and the Congo red was carried to the periphery and finally distributed throughout the whole extremity distal to the position of the bandage. Soluble substances injected into the blood stream were recovered from the lymph of the congested part. This work is of value to show that the Bier congestive method is really efficacious in keeping all insoluble substances, such as living or dead bacilli, within the part congested, and the reversal of the lymph stream after long congestion would indicate that bacteria might even be washed out of the affected part and escape by the wound. [W. T.]

Deutsches Archiv für Klinische Medizin. Band 92. Heft 1 and 2, 1907.

1. Pollitzer. *A Criticism of Arneth's Method of Analysis of the Neutrophile Blood Picture in Various Diseases.*
2. *Blumenthal and Morawitz. *Experimental Posthemorrhagic Anemias and their Relation to Aplastic Anemia.*
3. *Schieffer. *The Influence of Nutrition on the Size of the Heart.*
4. *Bennecke. *Clinical and Bacteriological Observations in Typhoid, Particularly in Typhoid Complications.*
5. *Lommel. *Polycythemia.*
6. Lichtwitz. *Experimental Observations on the Formation of Precipitates in the Bile.*
7. *Morawitz and Rehn. *Certain Inter-relations of Tissues in Hematopoietic Organs.*
8. Takayasu. *The Relations between Anatomical Glomerular Changes and Renal Function in Experimental Nephritis.*
9. *Oehler. *A Remarkable Case of Dyskinesia Intermittens Brachiorum.*
10. *Friberger. *Experiments upon the Effect of Morphine when Administered in Different Ways.*

2. Blumenthal and Morawitz have investigated the changes following repeated hemorrhages in dogs and rabbits. In the dogs, blood was removed on repeated occasions from various arteries, whereas in rabbits, leeches were used to obtain the blood. By this method they were able to produce bone marrow changes which indicated an exhaustion of their erythroblastic activity, and presented a picture very similar to that in aplastic anemia. These changes consisted in a disappearance from the marrow of erythroblasts and granular leucocytes with an increase of lymphoid cells. However, the regenerative activity of the bone marrow showed great individual differences, and in this the age of the animal appeared to be an important factor. Compensatory changes in the spleen, liver and lymph glands were not observed, but in the spleen there was evidence of an increased destruction of red blood corpuscles. In connection with these studies the appearance of basophile granules and polychromatophilic changes in the red blood corpuscles was followed. The authors regard these changes as evidence of regenerative activity on the part of the blood, and think that both changes are associated with the disappearance of the nuclei from the red blood corpuscles by the process of karyolysis. These conclusions, however, are based upon a study of only a few animals and since they differ in some respects from the results of other observers, they are open to the criticism

of the possibility of individual peculiarity of the animals used.

3. Schieffer has studied in dogs, by means of the orthodiagraph, the size of the heart in its relation to over and under-nutrition and finds that relative starvation considerably reduces the size of the heart, apparently also its weight, while over-feeding rapidly increases the same. It would appear from this that the size of the heart stands in close relation to nutrition.

4. Bennecke reports some observations made on typhoid cases in the Jena clinic. Cultural methods, as with other observers, yielded 100% of positive results in the first week and 71% in the second, showing a decrease in the bacteriemia in the later stages of the disease. In one case during the convalescence a thrombus which had formed in the femoral vein broke down with evidence of a local inflammatory condition, and from this softened thrombus typhoid bacilli were obtained in pure culture. Subsequently the entire thrombus was excised and the vein ligated above, in order to prevent the danger of embolism. In another case furunculosis developed during convalescence and was accompanied by a slight rise in temperature. From these furuncles a pure culture of typhoid bacilli was obtained. There was no increase in the number of leucocytes and no relative increase in the polynuclears, whereas in another case of furunculosis caused by pus cocci, otherwise similar in symptomatology, there was a slight leucocytosis with relative increase in polynuclear leucocytes. These observations lead Bennecke to believe that in a certain number of cases an irregular temperature increase during convalescence is to be regarded not as a relapse, but as the result of typhoid toxin or localized development of typhoid bacilli causing local complications. In some of these conditions where typhoid is a true pus-producer the absence of leucocytosis will aid in the diagnosis. One case observed by Bennecke might be regarded as a hemorrhagic type of typhoid, but bacteriologic study showed that there was a secondary infection with streptococcus. Bennecke believes that the diagnosis of hemorrhagic typhoid should not be made unless the possibility of secondary infection is ruled out.

5. Lommel has had opportunity to study carefully a second case of polycythemia and reports here the results of this study. Various theories have been advanced as to the cause of the condition. One theory is that in these cases the hemoglobin possesses a deficient power of uniting with oxygen, and this leads to the increase in the number of red blood corpuscles. In some of the cases autopsy has shown a chronic venous stasis in some part of the body and this has been regarded as playing a causative part. These explanations would make the blood change a secondary one, whereas other observers have regarded it as primarily a blood disturbance. In the case here reported, the red blood corpuscles exceeded ten millions in number. The case differs from many others in that only on one occasion was the spleen found to be enlarged and then only slightly. In this case there was an increased excretion of urobilin, which fact suggests an increased formation of red blood corpuscles and is in accord with the finding of nucleated red blood corpuscles in the circulating blood. The viscosity of the blood was also increased. The absorption power of the hemoglobin for oxygen was about that considered to be the lower limit of the normal, and when taken into consideration with the increased number of red blood corpuscles represents a deficiency in this capacity. The case showed no lesion of the heart, but there was, perhaps, a disturbance in the pulmonary circulation leading to local venous stasis. This local venous stasis combined with the defective oxygen absorption power of the hemoglobin, Lommel considers to be important factors in the etiology.

7. Morawitz and Rehn discuss the possible inter-relations of the various blood forming tissues in the body in conditions of anemia, etc. In their previous paper (No. 2 of this review) they found that after bleeding an animal the bone marrow showed a disappearance of erythroblastic tissues and granular leucocytes with the appearance of lymphoid cells. They discuss the probability of this being in a certain sense a compensatory change by which lymphoid cells take up the function of the other blood elements. Somewhat similar exchange relations have been found in the various conditions which have been described as atypical anemias, leucanemias and certain toxic conditions. It seems quite clear that there is either some close relation between the myeloid and the erythroblastic tissues, or that injurious substances affecting one almost always affect the other. As far as the lymphoid tissue is concerned, the pivotal point in the argument is whether these non-granular cells of the bone marrow are true lymphocytes or not. The studies of Morawitz and Rehn seem to show that they are not true lymphocytes, but are probably a very early stage in the development of myelocytes, though the authors are somewhat inclined to the view that myelocytes may arise as a result of certain changes in lymphocytes. From a review of the work of these authors and the personal experience of the reviewer, it would seem much more likely that the changes here described represent in large part an exhaustion of the bone marrow resulting in there remaining in the bone marrow only very young cells of indeterminate structure, cells which probably represent the mother cells of either erythroblasts or myelocytes and true lymphocytes, since the latter are almost always present in bone marrow.

9. Oehler describes a male of forty, with the following symptoms: For about a year early in the morning there was a marked feeling of coldness in the left arm, which increased so much during mechanical work that the patient was compelled to stop work by midday. These symptoms persisted for three or four weeks and then gradually subsided with the exception of a slight feeling of coldness in the arm when first beginning work. Gradually in addition to the sensation of coldness, there was a peculiar drawing or sticking sensation in the flexor muscles of the left upper arm, and a few days later, while working, there was a sudden cramp-like pain in both upper arms with flexion of the arm. The arms could be forcibly extended, but on beginning work again the condition returned and work was done with the greatest discomfort. Always the symptoms were more marked on the left than on the right, and if motion of the arm was continued, a point was soon reached at which no more flexions could be made. The discomfort always disappeared after a short rest. Examination of the left arm showed no trace of a pulse in the brachial or radial arteries, and no very definite thickening of the radial arteries could be made out. In the right arm the pulse was just palpable in the radial and upper part of the brachial arteries. Somewhat similar cases have been described under the term "intermittent claudication localized in the arms." Oehler considers that the symptom is the result of a limited blood supply due to organic changes in the main artery, but does not think that any changes in the nerves are necessary for the appearance of the symptom. In these cases there is either a marked narrowing of the lumen of the larger vessel at some one point, or very extensive narrowing throughout the vessels supplying the entire vascular area. In this particular case it is probable that repeated exposures to severe heat was the etiological factor, since the man worked in a tile factory in which his arms were frequently exposed to the intense heat of the ovens.

10. By means of the effect on the pupils, measured by an ingenious apparatus, Friberger has studied the effects of morphine given in various ways. He finds that morphine injected subcutaneously has a considerably longer effect than when given by mouth, and also a more intense action. If the drug is given by mouth between meals the effect appears as quickly as when given subcutaneously, but it is considerably delayed if given with the meals. When given per rectum the action is the same as when given on the empty stomach. [H. A. C.]

Archiv für Klinische Chirurgie.

Band 84. Heft 1.

1. *v. Haberer, H. *Attempts at Transplantation of Fresh Renal Tissue.*
2. Leischner, H. *Experiences in Rhinoplasty.*
3. *Clairmont, P. *The Diagnosis and Treatment of "Basal-celled" Cancer.*
4. v. Frisch, O. *A Rare Case of Elephantiasis of an Extremity.*
5. *Clairmont, P. *The Treatment of Inflammatory Strictures of the Rectum.*

6. *Pichler, H., and Ranzi, E. *Immediate Protheses after Resection of the Lower Jaw.*
7. *Leischner, H. *The Transplantation of the Parathyroid Bodies and Its Practical Application in Surgery.*
8. *v. Saar, G. F. *Cystadenoma of the Breast and Chronic Cystic Mastitis.*
9. *Ranzi, E. *The Formation of Antibodies by the Injections of Cancerous Material into Animals.*
10. v. Frisch, O. *Congenital Curvature of the Spine.*

1. Von Haberer has found that though fresh kidney tissue can be transplanted into spleen, omentum or liver, it gradually becomes necrotic and is absorbed. Therefore any successful transplantation must be by the method of blood vessel suture as done by Carrel and others.

3. According to Clairmont the various forms of cancer of the skin are best divided into (1) "basal-celled" cancer, which shows no tendency to become cornified; (2) squamous epithelial cancer, which does become cornified, and (3) transition forms. The term "basal-celled" does not mean that the tumor can arise only from the continuous layer of basic cells of the superficial epithelium, for it may arise from groups of basic cells which have become misplaced during the embryonal or post-fetal periods of development. It may also take origin from those appendages of the skin which are formed from this layer. In many cases such basal-celled cancer of the face and scalp forms a definite clinical picture. On the nose, cheeks and upper lip it appears as a sharply circumscribed, raised tumor of irregular contour. The surface may be ulcerated in only a small spot, while the rest of the tumor is covered by a soft, thin layer of skin in which small blood vessels are visible. Or, if the duration has been longer, the ulceration is more extensive and forms a surface depressed below that of the surrounding tumor, but never below that of the surrounding skin. It never takes the form of a crater. The floor of the ulcer is of an uneven, papillary, or even nodular character, not extending very deeply into the tissues, even in its oldest portions. The transition from the ulcer into the other portions of the tumor is irregular and gradual, the edges never being undermined. The external edges of the tumor form a steep or even overhanging surface above the surrounding skin, which is always uninvolved. This peripheral part of the tumor is of a reddish-yellow or waxy-yellow color, looks almost transparent, and is not painful. The ulcer bleeds but slightly, is not usually covered with pus and secretes only serous fluid. There are no enlarged lymph glands. In the scalp, similarly to epithelioma of the face, the beginning of the tumor is usually noticed years before in the form of a small nodule. This slowly becomes a spherical tumor the size of a nut, protruding above the scalp like a mushroom. It is easily movable, not adherent to underlying structures, of soft consistency and not accompanied by glandular metastases. Such tumors have been described in the past as endotheliomata. When they occur in the neighborhood of the eye they have an especial malignancy and in this location the typical clinical picture is also lacking. The rodent ulcer is a basal-celled cancer. The behavior of these tumors when exposed to the x-ray forms another justification for their differentiation from the type of squamous-celled cancer, for they can be made to disappear completely by this means, even when extensive ulceration has taken place. A cornified cancer of like extent does not show such beneficial influence. In all cases an exploratory incision should determine the treatment. On the trunk and extremities basal-celled cancer is more rare. Its clinical picture here, as well as when it occurs on mucous membranes, is the same as that described above.

5. Clairmont's experience with rectal strictures leads him to the conclusion that they can be cured by the formation of a colostomy, followed by the use of the continuous bougie. It is, however, a long, tiresome process, often causing pain and periods of fever. Combined with the injection of boric acid or silver salts through the colostomy opening, it is better than a simple artificial anus, and is applicable even to cases in which operation has been done for intestinal obstruction.

6. The writers report five successful instances of the use of the immediate prothesis of Fritzsche, after resection of the lower jaw.

7. Leischner has transplanted all the parathyroids of an animal without the appearance of tetany. Similarly, he has transplanted a parathyroid from one animal into another, and later removed all its own. Since such transplanted glands are thus shown to preserve their function, it should be a rule with surgeons to search the thyroid tissue removed at operation on the human and to re-implant these bodies if they have been removed. Cases of tetany may be treated by the implantation of one parathyroid removed from another person; for the removal of one of these bodies has been shown to be harmless.

8. Von Saar's conclusions are as follows: (1) The cystadenoma of the breast is a neoplasm in which the epithelium plays the leading rôle, while the connective tissue exerts no especial influence. It is impossible to find any connection between this and the involution processes of the gland. (2) The occurrence of a chronic inflammatory process with the formation of cysts — a chronic cystic mastitis — has not yet been definitely proven. When an inflammation occurs in a cystic breast it leads to the destruction of the cysts, not to the formation of new ones.

9. Ranzi finds that the antibodies formed by the injection of tumor material into rabbits, apes, or man are not specific for tumor tissue. Several of the immune sera showed hemolytic properties for human blood corpuscles. Tumor extracts did not have this power. [W. C. Q.]

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Miscellany.

ROUTES TO AND FROM THE PAN-AMERICAN CONGRESS AT GUATEMALA, AUG. 5 TO 10, 1908.

New York by train to New Orleans; thence by United Fruit Company steamer to Puerto Barrios on the Gulf; thence by train to Guatemala City, $56, plus the price of food and sleeper on train to New Orleans. Time, seven days.

From the Middle West the rates and time will be about the same as above. Steamers leave New Orleans for Puerto Barrios Thursday mornings at 10 o'clock.

From San Francisco by boat to San José; thence by train to Guatemala City, $76.50. Time, eleven days.

Return trips: By the same routes and at the same expense as above.

OTHER WAYS OF RETURN TO THE EAST AND MIDDLE WEST:

By train from Guatemala City to San José; thence by boat to Salina Cruz, a Mexican and Pacific port; thence overland to City of Mexico. Cost, $53.

From City of Mexico entirely by rail, including berth, to New York, $80. Total cost from Guatemala City to New York City, $133.

Probably the same to the Middle West.

From City of Mexico to Vera Cruz, $10; thence by Ward Line steamer to New York, stopping at Yucatan and Cuba, $60. Total cost from Guatemala City to New York City, $123.

The Capitol at Guatemala is situated on a plateau 1 mile above sea level. August is the time of year known as the "cunicula," when there is no rain and the heat is not as great as in our own southern states. Hotels at Guatemala, $2 and $4 a day.

RECORD OF MORTALITY

For the Week ending Saturday, June 20, 1908.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	0	—
Chicago	455	110	Waltham	9	3
Philadelphia	—	—	Pittsfield	—	—
St. Louis	—	—	Gloucester	6	2
Baltimore	168	16	Brookline	4	2
Cleveland	—	—	North Adams	5	1
Buffalo	—	—	Chicopee	6	3
Pittsburg	—	—	Northampton	6	1
Cincinnati	—	—	Medford	3	—
Milwaukee	—	—	Beverly	5	—
Washington	—	—	Leominster	0	—
Providence	58	17	Hyde Park	3	0
Boston	203	59	Melrose	6	3
Worcester	34	11	Newburyport	—	—
Fall River	43	24	Woburn	4	—
Cambridge	23	6	Westfield	6	1
Lowell	28	10	Marlboro	4	0
Lynn	10	2	Revere	2	—
New Bedford	21	7	Attleboro	—	—
Springfield	17	5	Peabody	—	—
Lawrence	27	8	Adams	—	—
Somerville	20	4	Clinton	4	2
Brockton	14	5	Gardner	2	1
Holyoke	17	10	Milford	3	2
Malden	3	0	Watertown	1	0
Chelsea	7	1	Plymouth	—	—
Newton	2	—	Weymouth	3	0
Salem	10	5	Framingham	2	—
Haverhill	11	2	Southbridge	—	—
Fitchburg	5	2	Wakefield	—	—
Everett	6	3	Webster	—	—
Taunton	6	1	Arlington	3	—

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED JUNE 17, 1908.

Pettus, W. J., assistant surgeon-general. Granted leave of absence for two days from June 12, 1908. June 12, 1908.

Pettus, W. J., assistant surgeon-general. Directed to proceed to Philadelphia for special temporary duty, upon completion of which to rejoin his station at Washington, D. C. June 13, 1908.

Eager, J. M., assistant surgeon-general. Granted leave of absence for one month from June 24, 1908. June 12, 1908.

Clark, Taliaferro, passed assistant surgeon. Directed to proceed to Ellis Island, N. Y., for special temporary duty, upon completion of which to rejoin his station at Philadelphia, Penn. June 12, 1908.

Clark, Taliaferro, passed assistant surgeon. Granted leave of absence for four days from June 10, 1908. June 16, 1908.

Lavinder, C. H., passed assistant surgeon. Granted leave of absence for four days from June 16, 1908. June 13, 1908.

McMullen, John, passed assistant surgeon. Granted leave of absence for one month and ten days from July 1, 1908. June 13, 1908.

Holt, John M., passed assistant surgeon. Granted leave of absence for one month from July 15, 1908. June 12, 1908.

Schereschewsky, J. W., passed assistant surgeon. Directed to proceed to Ellis Island, N. Y., for special temporary duty, upon completion of which to rejoin his station at Baltimore, Md. June 12, 1908.

Roberts, Norman, assistant surgeon. Directed to report to the chairman of a board of examiners at Washington, D. C., July 6, 1908, to determine his fitness for promotion to the grade of passed assistant surgeon. June 13, 1908.

Collins, G. L., assistant surgeon. Directed to report to the chairman of a board of examiners at Washington, D. C., July 6, 1908, to determine his fitness for promotion to the grade of passed assistant surgeon. June 13, 1908.

Ebert, H. G., assistant surgeon. Directed to report to the chairman of a board of examiners at San Francisco, Cal., July 6, 1908, to determine his fitness for promotion to the grade of passed assistant surgeon. June 13, 1908.

Manning, H. M., assistant surgeon. Directed to report to the commanding officer of the Columbia River Quarantine Station for special temporary duty. June 14, 1908.

Brown, Silas E., acting assistant surgeon. Granted leave of absence for twenty-one days from July 6, 1908. June 15, 1908.

Duffy, Francis, acting assistant surgeon. Granted leave of absence for five days from June 15, 1908. June 13, 1908.

Rodman, J. C., acting assistant surgeon. Granted leave of absence for five days from June 15, 1908. June 13, 1908.

Safford, M. V., acting assistant surgeon. Directed to proceed to Ellis Island, N. Y., for special temporary duty, upon completion of which to rejoin his station at Boston, Mass. June 12, 1908.

Slade, H., acting assistant surgeon. Granted leave of absence for thirty days from Aug. 1, 1908. June 15, 1908.

Stevenson, J. W., acting assistant surgeon. Granted leave of absence for twenty days from July 6, 1908, and excused without pay for a further period of two months. June 12, 1908.

Story, H. C., acting assistant surgeon. Granted leave of absence for thirty days from Aug. 1, 1908. June 10, 1908.

Townsend, W., acting assistant surgeon. Granted leave of absence for thirty days from April 24, 1908, on account of sickness. June 13, 1908.

MacDowell, W. F., pharmacist. Granted leave of absence for thirty days from July 6, 1908. June 13, 1908.

BOARDS CONVENED.

A board of officers was convened to meet at the Bureau, Washington, D. C., July 6, 1908, for the purpose of examining assistant surgeons to determine their fitness for promotion to the grade of passed assistant surgeon. Detail for the board: Assistant Surgeon-General W. J. Pettus, chairman; Passed Assistant Surgeon Joseph Goldberger; Passed Assistant Surgeon J. W. Trask, recorder. June 13, 1908.

A board of officers was convened to meet at San Francisco, Cal., July 6, 1908, for the purpose of examining assistant surgeons to determine their fitness for promotion to the grade of passed assistant surgeon. Detail for the board: Surgeon H. W. Austin, chairman; Passed Assistant Surgeon Rupert Blue; Passed Assistant Surgeon W. C. Hobdy, recorder. June 13, 1908.

APPOINTMENT.

Henry Asbury Christian, A.M., M.D., has been appointed Hersey Professor of the Theory and Practice of Physic at the Harvard Medical School from Sept. 1, 1908.

RECENT DEATHS.

William Marcelline Mercer, M.D., M.M.S.S., died in Pittsfield, June 10, 1908, aged sixty-six years.

Dr. Michael J. Neville, of Brooklyn, N. Y., died on June 22 in St. Catharine's Hospital, to which institution he was an attending surgeon. He was a native of Ireland, thirty-seven years of age, and was graduated from Queen's College, Canada, in 1893.

BOOKS AND PAMPHLETS RECEIVED.

A Short Practice of Midwifery. Embodying the Treatment adopted in the Rotunda Hospital, Dublin. By Henry Jellett, B.A., M.D. (Dublin University), F.R.C.P.I. With a preface by Sir W. J. Smyly, M.D., F.R.C.P.I. Fifth edition, revised. Illustrated. London: J. & A. Churchill. Philadelphia: P. Blakiston's Son & Co. 1908.

Diseases of the Nervous System. By H. Campbell Thomson, M.D. (Lond.), F.R.C.P. Illustrated. Chicago: W. T. Keener & Co. 1908.

Progressive Medicine. Edited by Hobart Amory Hare, M.D., assisted by H. R. M. Landis, M.D. Vol. X, No. 2. June 1, 1908.

Insomnia and Nerve Strain. By Henry S. Upson, M.D. Illustrated. New York and London: G. P. Putnam's Sons. 1908.

Outlines of Physiology. By Edward Groves Jones, A.B., M.D., and Robert Grier Stephens, A.B., M.D. Second edition, revised. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1908.

The True Way of Life. By Dr. Nanny Randolph Ball Baughman. Burlington, Ia. 1907.

Pharmacology. The Action and Uses of Drugs. By Maurice Vejux Tyrode, M.D. Philadelphia: P. Blakiston's Son & Co. 1908.

The Heart and Sudden Death. By Theodore Fisher, M.D., F.R.C.P. Illustrated. London: The Scientific Press. 1908.

Cancer. Operation not the Cure but a Cause. By John Shaw, M.D. London: "The Pilot" Press.

The Evolution of the Disease-Entity called Manio-Depressive Insanity, and Its Main Features. By A. W. Hoisholt, M.D. Reprint.

Address.

THE SANCTITY OF MEDICINE.*

BY THOMAS F. HARRINGTON, M.D., BOSTON.

To be requested to give this time-honored address is a privilege and an opportunity that comes only once in a man's lifetime. In the century of annual occasions devoted to this custom, The Massachusetts Medical Society has ever kept before its members the high ideals and the sacred objects of her founders. She has taken this means usually to urge forward the efforts of her members for higher standards in medical education, to stimulate measures of preventive medicine, to advocate ways and means for the preservation of the public health. At times she has directed her resources towards the eradication of some social or medical heresy, not always outside her own fold, and in no other field of her endeavor has she fought more vigorously nor more uncompromisingly. Principles, not policies, have been her standard. Compromise found no resting place in her councils. Calm, judicious deliberation preceded action always, and after that action once became the will of the society, all personal dissensions and opposition disappeared in the unity of the whole. As we examine these various problems in the light of history, their inception and growth center about some period of reaction against extreme methods of therapeutics, or they were part of a wave of unrest incidental to some new discovery or new invention, or quite often, perhaps, they were the outward expression of some loss of equilibrium in the stability of the art and science of medicine itself.

To-day it is evident on all sides that we are confronted with problems in the practice of medicine, the rightful solution of which is going to decide whether the brilliant discoveries of the past thirty years are to give their full immediate blessings to mankind or whether confusion and chaos must reign until another generation corrects the faulty perspective of the profession and the laity of our day. Following the traditions of this revered and famous medical society, I would present some of these problems of to-day under the title

THE SANCTITY OF MEDICINE.

From time immemorial medicine has been given a place of dignity and sanctity accorded to no other science. No age nor people nor state of civilization has ever existed that does not bear testimony to the profound respect for him who bound up the wounds, set the broken bones, healed the diseased state and restored the blessings of health. In the earliest times the physician was deified; almost supernatural powers were ascribed to him and death even was supposed to lose its invincibility when combating with the physician. Much as we have strayed otherwise from the early conception of medicine and of the physician, there is manifested by the laity to-day that simple faith, that belief in authority which has always been such an important factor in the curing of many diseases. This has ever given to medicine a true sanctity among the sciences. Let us then review briefly our proud ancestry in medicine, the source from which has come this unquenchable fountain of hope in sickness and in disease.

Medicine may be traced to two separate origins, Greek and Hindu. The date of its origin in Greece is lost in fable. According to Greek mythology, the sun-god Apollo presided over medicine, and Chiron, one of the Centaur race, was metamorphosed into a horse, and while hunting in the mountains and forests with the goddess Diana he acquired a knowledge of plants as well as of astronomy. Chiron is supposed to have been a prince of Thessaly and to have lived prior to the acquisition of the Golden Fleece and the siege of Troy. His grotto at the top of Mount Pelion became a famous school, and here he instructed the Argonauts in medicine and was likewise teacher of Bacchus, Hercules, Æsculapius, Machaon, Æneas and Achilles and other heroes of that remote age. He taught medicine and surgery, music and gymnastics, and is said to have employed music as a remedial measure in sickness. Among Chiron's pupils was Æsculapius (B.C. 1200), who so excelled in the art of medicine the teachings of his master that he was deified by the Greeks, and his followers became the priests of the shrines erected in honor of their ancestor. Two of these, Machaon and Podaleirios, sons of Æsculapius, were at the siege of Troy (B.C. 1184) and were immortalized by Homer.

The origin of medicine was no less sacred among the Hindus. Dhanwantari (B.C. 1100?) represents in India the place occupied by Æsculapius among the Greeks. According to Brahmanical mythology, the gods churned the ocean for the purpose of recovering for mankind the comforts and conveniences lost during the Deluge. Among the fourteen precious gifts restored was the health-giving Dhanwantari, the celestial physician. This fable goes on to relate how medicine was revealed by Brahma to Dhanwantari, who became physician to the gods, and who later taught this knowledge of the healing art to his pupils, Susruta and Charaka, surgeon and physician, respectively. These last two interest us directly because their legendary is interwoven closely with that relating to the origin of the Ayur-Veda, a medical work whose age has been placed at from nine to sixteen centuries before Christ. Neither Susruta nor Charaka had the prejudices common among the Hindus (high caste) of touching the dead body, and the illustrations in their works show that they must have dissected freely. To any student of medicine who thinks that all knowledge and wisdom in the science and in the art of medicine are due to modernity, the reading and the study of this most ancient medical work, whose authorship is now ascribed generally to Brahma, will be found most illumining.

From the foregoing two facts should be noted, namely, that medicine was *acquired* by Chiron in his botany excursions, and was *revealed* by Brahma to Dhanwantari, who, in turn, taught it to Susruta and Charaka. The influence of these two beliefs in the origin of medicine can be traced through history, and has given to medicine always that atmosphere of mystery from which the laity of our day have not emerged wholly.

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* The annual discourse delivered before The Massachusetts Medical Society, June 10, 1908.

The Greeks soon became greatly saturated with Hindu philosophy, and its influence predominates in their medical doctrines and from these to other times. Pythagoras (570–504 B.C.) established in the south of Italy the Doric and the Italian school of medicine, and two of his pupils, Heraclitus and Herodicus, were the teachers of Hippocrates (460–361 B.C.). These schools originated the idea of critical days in certain affections and were the first among the Greeks to investigate the structure and functions of the body. Hippocrates became a stanch disciple of the Pythagorean philosophy, which was but the continuation of the teachings of the temple doctors. He did not originate the Greek or so-called scientific medicine, but was rather the most striking figure in what was destined to be a new era in medicine. There have been systems of so-called divine healing in all great civilizations, but none have ever reached that high state of development, both for beauty of conception and for grandeur in execution, which characterized the cult of the son of Apollo. The many social cults in medicine to-day supposed to be the results of exaggerated imagination are but mild prototypes of those set forth in the "Plutus" of Aristophanes.

The Hippocratic age combined the imagination of the earlier age and the restless critical spirit of observation characteristic of the new era striving to break away from the traditions of the past. Speculation and theory gave way to rational deduction; rival centers of intellect precluded the possibility of stagnation, and a foundation for scientific medicine was thus laid. So well was this work done that its central figure has ever since been accorded the title, Father of Medicine.

Hippocrates did not establish any fixed system of medicine. He taught the value of accurate observation of actual phenomena and the method of rational deduction from observed facts rather than by speculation and theory. He set a high moral ideal for the physician in a code of ethics which has had few equals as a human document. It was due to the influence of the Hippocratic era that medicine under the Macedonian régime and at Alexandria reached that high plane which gave birth in anatomy and in physiology to so many accurate data. Gradually, yet effectually, the sophistry of the philosophers overrode the science of medicine and the doctrines of Hippocrates became blended with platonic philosophy. Then followed system after system in medicine, — the Dogmatists (B.C. 400), the Empirics (B.C. 268), the Methodists (B.C. 100), the Eclectics (B.C. 81), and finally the Peripatetics, in which Plato's pupil, Aristotle, overthrew his master's deductive method and instituted therefor the inductive method. This was an age of great thinkers, of great intellectual attainments; but, true to the lessons taught by history that it is the theorist who is most honored by his contemporaries, and that real progress in science is made only by the man who uses his eyes, the observer who sees something and can tell it simply as he sees it, we are not surprised to learn that the practice of medicine in this period had fallen so low in the estimation of men that the Romans considered it beneath their dignity to engage in a profession or art so given to commercialism. We might pause here and compare the conditions of to-day with those of early scientific medicine, and find in the comparison many points of similarity, warning us, perhaps, that history has a peculiar faculty of repeating itself. My theme urges me onward, so let us trace historically the passing on of the torch which has ever burned before the shrine of medicine.

With the spiritual redemption of mankind came a great reformation in medicine. Galen was now the central figure. In every department of medicine the influence of this wonderful man was evident. He opposed the Methodists and Empirics and added to the foundation of medicine anatomy and physiology; he was a great experimenter and aided thereby clinical medicine. His deductions from the dissections of apes and other animals led him into error often when these were applied to the construction of the human body; nevertheless, he retaught the methods of Hippocrates in observation and accurate description, and so great was the reaction that Galen became an infallible authority and for more than thirteen hundred years one whose word was law. This blind submission to medical dogma was the greatest factor in checking progress in medicine. It required the Renaissance for its overthrow. In the whole history of medicine there is not another such example of the complete prostration of the understanding where facts were clearly obtruding themselves upon observation, yet were allowed to go unnoticed or totally disregarded. Throughout the Middle Ages the Byzantine School and the Arabian School strove to preserve and keep alive the early Greek medicine. A Celsus or an Avicenna rose up to recall medicine from its lethargy, but the blind homage to Galen prevailed until its complete overthrow by Paracelsus in the sixteenth century.

Medicine reached modern Europe by means of the University of Salernum in southern Italy, and later into France, where dissection of human bodies, which had been prohibited or abandoned on account of religious rites among the Greeks, Egyptians and Arabians, was resumed. The brilliant sixteenth century discoveries by Vesalius, Eustachius, Falliopius and others of the Italian school made possible the next great figures in medical ancestry, Harvey, Paré and Linacre. At Padua, Servitus and Harvey, under the same teacher, Fabricius, contrasted greatly in their investigations with the aimless course pursued at the other European schools. Although here and there physicians so excelled their contemporaries that they were called "the English Hippocrates," or "the Dutch Hippocrates," yet so philosophical were their medical writings, and so absorbed were they in substituting theology for medicine, that no genuine progress resulted until Morgagni, in

Italy, and John Hunter, in England, united the phenomena of clinical observation with the study of morbid anatomy as found in the autopsy room. Surgery, too, was now raised from a mechanical art to an advanced science.

If we trace historically the offerings of science and of inventions during the eighteenth and nineteenth centuries, medicine will suffer nothing in the comparison; if we try to estimate the benefits accruing from the investigations of a Virchow, a Bichat, a Morton, a Pasteur, a Lister, a Koch or a Theobald Smith, we can claim without fear of contradiction that mankind can never repay the debt. This brings us to a striking paradox. It is now admitted generally that the century just closed has witnessed discoveries in medicine that have added more to the general welfare of mankind, as measured by relief from suffering and disease, than the aggregate of all discoveries and inventions since the origin of man; on the other hand, we are forced to the conclusion that the physician of to-day does not occupy in the family, nor in the public mind, the same position of confidence, of prestige and of authority in health problems as formerly. How much of this is part of the wave of revolt against tradition and authority in all branches of human activity, — in religion, in political government, in art and in the sciences? How much of it is due to the fact that while the physician has been striving to increase his knowledge of supposed physical causes of man's sufferings, and while he has been laboring for the eradication of disease, he has lost sight of the *patient*, the whole indivisible human being? Discovery has followed discovery so rapidly that the physician and the layman have become impatient, restless and well-nigh impetuous in seeking progress. So much has been accomplished in medicine that we have come into the state of believing that all disease must yield to science. The laboratory spirit and the practice of specialization in medicine have combined in giving false estimate of the possibilities in medicine, an overzealousness often to detect disease itself. Having eliminated entirely from medicine all philosophical reasoning we confound sometimes generalizations with the facts themselves, and thus we fall often into error. New theories without basis of proof are then accepted as modern science, when, as a matter of fact, there is no science at all; half-demonstrated hypotheses become the foundation of new schisms which have in their creed just enough truth to merit some recognition. If, then, in the light of the past and in the full possession of established facts to-day we state our position rightly, science cannot suffer from knowing the truth, medicine must regain its sanctity from such an illumining, the physician can re-establish his rightful sovereignty by no surer means and the public cannot but be healthier and more sane therefrom.

The entire outlook on the science of medicine has been revolutionized during the past thirty years. Heredity no longer sways the destiny of mankind; the chemical control of the wonderful co-ordinations of the activities of different parts of the body is now appreciated; the knowledge of infections and zymotic diseases has given us a better understanding of immunity and has resulted in the vaccines, antitoxins and curative sera; and finally, a most extraordinary change has taken place in the scope of therapeutics. All this has affected greatly the sanctity of medicine as well as the physician. It has emphasized the importance of laboratory science and has created a new standard among medical men. Nothing in the whole history of medicine has been a greater factor than the laboratory in stimulating medical thought, in the bettering of medical practice and in the advancement of accurate diagnosis and treatment. Unfortunately, however, laboratory methods had come to be misunderstood as meaning something requiring a special room, a large equipment, a knowledge of languages and higher mathematics. These are valuable and most helpful, but they are not absolute essentials. The laboratory method, on account of its association with the more exact sciences, had been granted a rating for mathematical accuracy and for precision not enjoyed by observation, deduction or induction. The profession as well as the laity had come to believe that the laboratory diagnosis made by the various methods and instruments now known as laboratory tests was infallible and final; while the experience of countless keen, accurate observers of clinical phenomena as seen at the bedside was disregarded, and the employment of well-tested extra-laboratory methods of diagnosis and of prognosis retained so little of their former prestige that their neglect and abandonment seemed imminent. A reaction is already evident. The general practitioner now recognizes that the number and the application of laboratory methods which are of real advantage to him in the diagnosis of disease is surprisingly small in comparison with the number and the application of laboratory methods used for research purposes by the scientific worker who is devoting his entire time to this branch of science. With a good working knowledge of the methods employed in urine analyses, in the chemical analysis of stomach contents, in sputum examination and in the simple blood examinations, the general practitioner is well equipped for his work. He should keep in mind always, however, that there is a class of scientists more expert, to which may be referred all questions of doubt, as well as the more scientific problems in medicine and surgery. These two classes of scientists are distinct, and much genuine knowledge is possessed by the one which can never be helpful to the other. In the final testing of all discoveries, of all laboratory advances, it is the rank and file of the profession which translates into practice and makes effective the new knowledge gained. On the other hand, we must not forget that the laboratory has its limitations. Science has done much in revealing the mysteries of nature, but it should be remembered, however, that there are still mysteries in nature that science has not revealed and which science can never reveal. In a word, there is a whole universe which stretches out its limitless space beyond the range of human knowledge. Great and promising as the future of scientific medicine seems to-day, nevertheless, unaided and of its own resources it leaves unexplained the origin of vitality itself. Would that we as physicians could estimate rightly the mystery of life. We try often to isolate the particular organ in which the kingdom of life seems to have its seat, to state in terms of definiteness the length and range of its power, to guide its exuberance, to stimulate its flagging, yet we reach eventually the conclusion of all previous ages, namely, that there is in every human being a vitality, a source of energy, constant and as markedly individualistic as the imprint of one's finger creases, or the intonation of one's speech. Nor are the limitations of the laboratory less pronounced on the physical side of our nature. We are forced to acknowledge that there are hundreds of little accommodations between the various parts and between the various organs that it is impossible to explain or to be sure about; that there are countless reactions that cannot have a cause assigned to them; that there are numberless conditions that either cannot be labeled at all, or may receive several interpretations; that the state which looks grave to-day, as far as can be judged by all attainable knowledge, may be simple and harmless to-morrow; that the "doing well" of to-day may be a disaster before another dawn. In other words we must either accept or reject the conclusions expressed by the greatest scientists of all ages, and so tersely set forth recently by the late Lord Kelvin, "Do not imagine that by any hocus-pocus of electricity and viscous fluids you can make a living cell. You must never think of the living men and women and children as mere laboratory specimens, but as human beings." The great Pasteur expressed this truth beautifully thus: "The more I know, the more clearly does my faith approach that of the Breton peasant. Could I but know it all, my faith would doubtless equal that of the Breton peasant woman."

Unfortunately, the humility of these great men has not characterized scientists always, and we find men building hypothesis upon hypothesis which were a check to the progress of medicine. In the Platonic period of medicine, for example, the Greeks chose to speculate rather than to investigate the meaning of phenomena, and the mysticism that resulted was evident for centuries. This had an evil influence on the practice of medicine and gave the physician a false position in the estimation of the people. The sick man believed that the physician possessed powers almost supernatural, and the physician was forced to supply by fiction and pretense the appearance of possessing such knowledge. Here arose the judicial wig, the academic ruffle, the gold-headed cane, the reflected snuffbox and the Socratic air. To-day the impatience to fulfill the expectations of the laity lies within the profession, and while protesting on one side against the acceptance of all phenomena not proven by the laboratory, on the other hand we are encouraging, unconsciously, often, the belief among the laity that the absolute and exact knowledge of the nature of every disease is ascertainable and that an appropriate remedy for each exists. In other words, we are giving to medicine all the attributes of an exact science which it is impossible for medicine ever to attain. The truth of the matter is that the more we learn concerning the workings of the great internal laboratory, especially its relation to the action of the nervous system, the more we must realize that there are factors which do at times influence greatly the course of disease and which are neither measurable nor demonstrable by laboratory methods. These factors must be recognized; they must be stimulated, if we are to exercise rightly the fullness of medicine. Their appreciation by the physician is a check to the spread of infidelity and false skepticism in our ranks; their explanation, as much as they can be explained, will eradicate superstition among the laity; their acknowledgment will recover from the Eddyites and others of like belief the one grain of truth upon which has been built a mockery of Christianity and of science.

The over-emphasis of the importance of the influence of these factors, however, has given rise lately to a heresy no less grave than that resulting from the false view outlined above concerning the value of laboratory medicine. A new word, "psychotherapy," has been coined to express the method of treatment which in reality is a very old therapeutic measure. From the use of the word "psychic," as well as its association with religion, there is implied that the soul is the object of consideration, yet there is nothing in the condition of the patient or in the benefits accruing from this line of treatment which in any way affects the soul. The influence of the soul on the physical being, and *vice versa*, is an axiom of psychology; nevertheless, psychotherapy as understood in this instance is dealing with conditions in the patient which have resulted from influences acting primarily on the physical person through the senses, and secondarily through the imagination. It is in reality a physical result from an obsession of the imagination. Religion is not concerned in the problem at all. It is a physiological process pure and simple, and has a perfect analogy in the physical person. Just as in every person there is a margin of supply in all the tissues and fluids and organs of the body beyond which we seldom reach, and which makes a tolerably good state of health compatible with even a marked deviation from normal, so, too, in the non-physical state of every individual, there is a rich storehouse of unsuspected resources, one which is full of energy, awaiting but the spark of contact to manifest power and strength unknown to its possessor, even. Just as in the purely physical life, opsonins promise much in bringing into action those reinforcements which win the battle, so in this so-called psychic state a "phagocytosis," the nature of which has never yet been unraveled, results when the right opsonin is supplied, whether it be tar-water, Perkins' tractors, Christian Science or suggestion. This is what the physician from time immemorial has done, and the physician of to-day who looks upon his profession as a *vocation*, and acts accordingly, is fully ordained to stimulate the highest and best energy inherent in his patients. To admit anything else is to deny the very foundation of the sanctity of medicine and to destroy the cornerstone upon which is erected both religion and medicine, —faith. Before there was any science in medicine, at an age when medicine was philosophy, we find that same confidence, that unswerving belief of the patient in his physician which has come down unbroken through all ages. The advance of science and the experience of countless observers have combined to give a better basis for such a belief in the practice of medicine. We appreciate fully these gifts of science; we acknowledge their limitations; and while we admit the necessity almost as well as the value of that simple faith on the part of our patients. nevertheless, the practice of medicine is not medicine at all when that faith is based wholly upon the idea of mystery, or that the physician has supernatural power over disease. Neither the physician nor any other human being of himself has any such power. The association of religion and medicine has caused confusion. From time immemorial religion and medicine have each had its special field of labor. At all times medicine has received much strength from religion, and during many centuries its light must surely have failed had it not been for this protection; at times in early missionary work economy or exigency forced the union of theology and medicine, but there is no instance in all history where one has been substituted for the other that both did not suffer thereby. Medicine needs religion greatly, and the physician who does not allow it to have its legitimate moral and humane influence on his life — scientific as well as professional and lay — soon loses the sanctity of medicine, and substitutes a trade for a vocation. True religion, on the other hand, does not need medicine to complete its purpose, for it is perfection itself. When we come to miracles performed in the name of religion, by religion and through religion, we pass from the works ascribed to the power of man to those capable of being performed by God only. The physician or person who claims for himself or his profession any such supernatural power blasphemes religion and the sanctity of medicine. Scientific medicine has no conflict with true religion, and all attempts to estrange the two should find a ready foe from the ranks of medicine. It is not helping medical science to claim that cures are not possible because we cannot demonstrate the process, neither does it lower the dignity of the profession to acknowledge that there is a power higher than the science of medicine. When, however, men seek advice and relief on questions of physical ills from those not engaged in the practice of medicine, it is because our medical schools have failed to impress upon the minds of their students the full breadth of the vocation of the physician. They have left untouched the development of that subtleness, that comprehensiveness, that appreciation of the non-physical in man, which gives to the art of medicine the sacredness of a science. In other words, the student has been trained for pure materialism only. Any attempt to make psychotherapeutics, as defined to-day, other than a part of general medicine must be regretted, and is not devoid of danger. It is a legitimate part of the art of medicine. The physical and the non-physical are so interwoven that no illness can ever be said to be due entirely to the one or to the other. The recognition of this fact was the basis of one of the most ancient as well as the most sacred of the physician's vocational duties. There can be no division on this subject in the practice of medicine. It calls for the physician who sees and who can appreciate the whole patient. It reposes upon the specialist the necessity of recognizing that, while division is advantageous to the science and to the art of medicine, nevertheless there is a limitation beyond which this division fails to secure its best results. That there is legitimate field for true psychiatry is established and must not be confounded with the exercise of those duties resting upon each physician and surgeon in his daily vocation.

To meet these requirements calls for the rehabilitation of the family physician of the old school, not as a general practitioner, but as the adviser and the guide to the individual and to the family in all problems of health, and in the choice of a specialist, as well as to groups of individuals in their duty towards the state. This means that certain traditions and prejudices long existing in the practice of medicine must be altered. The physician can no longer confine himself to relationships with individual patients. He must take a position of leadership in public questions of health and morals. Society at large needs the idealism of the true physician, the example of his humble submission to authority, his uncompromising spirit of truth, his self-sacrificing devotion to the social good. Quackery and charlatanism will continue to be the accepted belief of the public until the educated physician puts within the reach of all the truth on questions of disease and cures.

There is no more powerful factor in furthering preventive medicine than by the popularization of medical knowledge. Observe that I do not advocate popularization of specific lines of treatment, but rather the wisdom, the necessity, for the physician entering actively into the broader fields of public health problems. We have seen what may be accomplished against tuberculosis; we have witnessed the eagerness with which the public sought knowledge from the best sources as illustrated at the free course of lectures at the Harvard Medical School during the past two years. There are almost limitless problems awaiting solution in public health, in school, in home and in workshop hygiene, in the care of the teeth, skin and sense organs, in the relationship of diet and exercise to health, in the evils of overcrowding in tenements, in the influence of modern life and modern industrial developments, in the life of the child, in the various social, economic and political questions involved in our social progress. Boards of health will remain inefficient, public schools will construct programs without regard to the physical welfare of the child, insane and public hospital institutions will fail to give their patients the advantage of modern progress, legislators will continue to disregard advances in preventive medicine just so long as the physician looks upon the practice of medicine as a means to administer drugs only. When we convince the public that the real value of medicine lies in the *advice* given by the physician to the individual and to the community we will hear less of the unreliableness of expert medical testimony and low fees in practice. Nothing in this public field of activity necessitates that the physician shall become the political doctor; on the contrary, there is no more effective check on those who would make the dignity and sanctity of medicine subservient to their personal ambitions and gains.

Medical things and the medical view and relation of affairs are as much the property of the public and subject to its review as in any other department of life. Quackery and charlatanism gain a foothold by a peculiar publicity and the positiveness of their claims. While preserving standards the profession must welcome the fullest inspection of its knowledge, institutions and departments.

To meet this conception of future medicine, medical schools must provide facilities for the broader application of their teachings. Their students must be equipped with the knowledge necessary to accept the responsibilities the public now believe should be reposed in the medical profession. The practitioner of the future must be not only highly educated as his college requirements to-day necessitate, but he must be so trained to give to the public the benefits of the choicest of the laboratory gifts, the wisest of the philosophy of our ancestors in medicine, and the consolation and strength of that faith engendered in each patient by his own firm conviction that man is God's highest and best work and that his best service is found in the sanctity of medicine.

"There is nothing in which men so approach the gods as when they give health to other men." (Cicero.)

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Original Articles.

OBLITERATING ENDARTERITIS: TYPES AND THEIR SURGICAL IMPORTANCE.

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1. ERYTHROMELALGIA.
2. ANGINA CRURIS OR INTERMITTENT LIMPING.
3. RAYNAUD'S DISEASE.
4. MORVAN'S DISEASE.
5. ARTERIOSCLEROSIS, SENILE GANGRENE AND SYPHILIS.

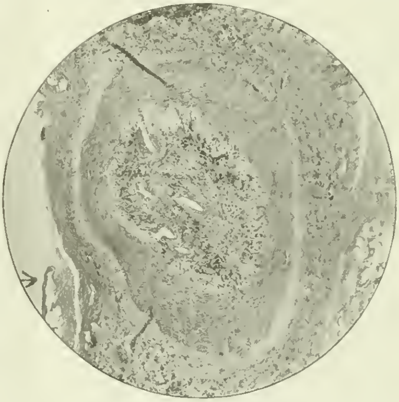
IN a recent article by Lovett [1] entitled, "Intermittent Limping," attention has been directed to a group of peripheral, circulatory disturbances having very great clinical significance, and about which little is known. At different periods of life, and in a totally different manner, the peripheral circulation of the extremities may be either continuously or intermittently interfered with to such degree as to cause symptoms varying all the way from a slight blanching or blushing of the toes or fingers, accompanied by objective sensations of heat or cold, to a condition of gangrene in which the phalanges one after another fall off. The cause of the symptoms which are presented by patients suffering from this variously named condition is doubtless not one common to them all, but seems beyond reasonable doubt to be at least intermediately related to each of them. The one feature which they seem to possess in common is the evidence of a narrowing of the lumen of the peripheral vessels. In some cases it is only possible to demonstrate this by clinical evidence; in others, pathological examination furnishes unequivocal proof. Practically all observers are agreed that the peripheral lesions in the vessel walls, be they permanent or paroxysmal, must be referred to some essential central lesion in the nervous system, either organic or functional. In order to understand the close parallelism between the various conditions manifesting this common peripheral change, it will perhaps be well to consider them in detail.

I. ERYTHROMELALGIA. *Vide* CASES 1, 2 AND 7.

As early as 1872, S. Weir Mitchell gave the first description of a circulatory disturbance in the peripheral vessels of the extremities, to which he applied the name "red pain." It is characterized by symptoms referred to the fingers or toes. When the feet are concerned it generally attacks at first one or the other of the toes, gradually extending to other of the digits and sometimes even on the dorsum of the tarsus or carpus. Associated with this pain there is discoloration, which at first is a bright reddish pink, deepening somewhat as the process becomes more chronic. Occasionally pain and redness may manifest themselves in other places than the extremities, as upon the trunk or over the neck and face. The extremities, however, are the most usual localities, and of these the feet are more often affected than the hands. Pain is usually of a very distressing character and is at times so severe that the patient threatens self-destruction. It is aggravated by the dependent position of the limbs and is made somewhat more comfortable by the application of cold. Heat accentuates the discomfort, and the summer season is that in which these patients suffer most acutely. There is little tendency to swell, though occasionally there will be noticed an apparent induration of the tissues in the reddened areas.

Savill [2] has demonstrated that this thickening is due to vascular turgescence and that there may be quite a rapid disappearance of this when the affected member is elevated. There is never any edema. In the early stages of the disturbance the painful area is colder than normal and in unilateral cases this is readily demonstrable. Later on the parts often become perceptibly warmer than is usual. At all times they are, subjectively, uncomfortably hot. In many cases before pain is complained of a sensation as of "pins and needles"[3] is experienced, similar to that which occurs when an arm or a leg "goes to sleep." There is never any loss of sensation in the affected region. Hyperesthesia is frequently spoken of and has been a conspicuous feature in those cases which have been personally observed by the writer. Both the dorsal and palmar surfaces of the hands and feet may be involved, or only the one or the other. There may be moderate remissions in the intensity of symptoms before a definite tendency toward recovery takes place, and in a few cases a permanent cessation of the local signs has been reported under conservative treatment. Gangrene occasionally supervenes, but more often one meets with ulcerations which refuse to heal. In the writer's experience these have not been spontaneous ulcers, but have resulted from some trouble inflicted upon the part. Muscular atrophy is not a prominent feature of this disease, though a moderate amount of it is likely to occur in most cases. In the feet there is often to be noted an absence of pulsation in the dorsalis pedis artery and sometimes even in the posterior tibial. It is said that in a small percentage of normal individuals it is impossible to detect pulsation in these vessels, so too much stress must not be laid upon such observations.[4] The condition is not by any means as rare a one as has been supposed up to quite recently. Oppenheim found only a very few cases at his polyclinic, at which there have been 12,000 instances of nervous disease. Savill,[2] to whom reference has already been made, has observed in one of the London hospitals 35 cases in two years, only 10 of which were apparently the sequel of disease of the central nervous system. Mitchell and Spiller[5] covered the literature of this subject to 1898. Previous to their compilation Lewin and Benda[6] had unearthed 42 cases, none of which had had pathological reports of the lesions. In 1903 H. B. Shaw[7] succeeded in collecting pathological reports of six cases, to which number he added three of his own with pathological investigations. He tabulates all these cases in such a manner that the histological findings may be easily compared. There were no degenerative changes in the peripheral nerves. The arterial lesions were largely confined to the intima of the vessels and were often most notable in the venæ comites. Shaw[8] also reports a case of erythromelalgia in one wrist of a man who had sustained a severe traumatism, suggesting the case to which Charcot makes reference in one of his clinical lectures, it being the first case of "intermittent claudication" he ever saw. That case was one of traumatic aneurism of one of the large vessels of the thigh. Charcot subsequently had opportunity to make the necropsy on this case, at which he was able to demonstrate the fact that because of the diversion of the normal blood supply through the aneurism the muscles below could not get sufficient nourishment when in action, and hence arterial spasm.

Gerrard[3] reports six cases among the Malays who work upon the coffee plantations. The trouble is quite prevalent among the coolie population. These laborers work on the hot fields, where the soil is often of such high temperature as to be uncomfortable, and have no protection for their feet. He thinks the explanation offered by Savill[9] is most competent to explain the condition, viz., that there is fatigue of the muscular walls of the arterioles. Mitchell and Spiller[5] report minutely and give illustrations of the pathological changes occurring in one of their cases which came to amputation. In the fresh specimen one of the toes seemed to show a marked degeneration of the nerves when subjected to osmic acid staining, but when the specimen was hardened and sectioned it was seen that connective tissue had almost entirely replaced the nerve fibers. In the arteries the media was greatly thickened and the intima was proliferated and projected irregularly into the lumen so that in some cases it nearly wholly occluded it. In some of the smaller arterioles the lumen was actually obliterated. In the largest vessels there seemed to be almost a tumor formation within the vessel's lumen. The walls of the veins were also thickened. They note the enlargement of the metatarsal bone in their specimen, a condition which Beck[10] has called attention to in Raynaud's disease and which he thought might be of some diagnostic value, inasmuch as the radiograph revealed the enlargement and thus demonstrated that the lesions of Raynaud's disease were not confined to the soft parts.



Case IV. Fig. 1. Erythromelalgia.

Fig. 1. Cross section of the dorsalis pedis artery. Note the thickening of the muscular coat and the presence of a new growth of connective tissue which occupies the lumen of the vessel. The elastic coat of the intima seems intact everywhere except as indicated by the arrow opposite where the new tissue at the center seems continuous with the structures external to the elastic coat. Note the irregular clear spaces, which are blood spaces, which may allow a small amount of blood to pass through the normal channels. The pigmentation represents hemorrhage.

Staub[11] has also made a similar observation. Very few investigations of the blood pressure in the subjects of this kind of circulatory disturbance seem to have been made and this in spite of the fact that atheromatous changes are frequently associated and that the Jewish is the race in which the majority of the cases of erythromelalgia have been reported; furthermore, the Jews are reputed to be more liable to arteriosclerosis than other nationalities. The first of such observations seems to have been made by Weber,[12] who reports a case of erythromelalgia in a married Jewish woman from Roumania, thirty-six years of age. She complained of pain in both feet, and upon examination they were found to be turgid with blood and the toes were bluish in color. They were hyperesthetic, hyperalgesic and were moist with sweat. The condition was aggravated when they were dependent. In various other parts of the body there were patches of hyperemia, and the tongue at times became quite cyanotic. There were no lesions of her viscera except as evidenced by a slight albuminuria. The blood pressure in the radial arteries was moderately elevated (140 mm. of mercury). There was no history of syphilis. The patient had had burning sensations in the feet for nearly two years before the discoloration was noted. Weber particularly emphasizes the diffusion of vascular phenomena during the exacerbations of the disease as being characteristic of erythromelalgia. He further draws comparisons between Raynaud's disease and erythromelalgia, stating as his belief that no hard and fast line can be drawn between them. He regards the reported arterial changes secondary to some primarily central lesion in the nervous system. He cites cases of death occurring in a series of arsenical beer poisoning cases which occurred in England in 1900. At autopsy these cases had lesions not unlike those seen in erythromelalgia, and the pathological changes observed in the nervous system were not by any means confined to the peripheral system. The arterial thickening in Raynaud's and erythromelalgia he thinks is due to the high arterial tension present in these diseases. The one observation which he himself made cannot be regarded as more than a "high normal."

He further compares the "syncope" and "asphyxia" stages of Raynaud's with the livid stage of the cases of erythromelalgia and sees in these conditions physical states not unlike "chilblains" and the hot, burning, congested feet so often complained of by elderly people after a brisk walk or when the feet are quickly warmed up by placing them upon "foot warmers."

Voorhees[13] reports quite fully a case of erythromelalgia occurring in a woman of fifty-seven years. The first indications were in the feet, and after a very acute and painful stage the symptoms subsided there, subsequently to occur in the trunk. At about this time she began to manifest an aphasia and an agraphia. As the acute symptoms subsided in the feet the skin over the toes desquamated. Shortly after this the patient died from apoplexy. There was no autopsy.

The difficulties in explaining the lesions of erythromelalgia on the basis of its peripheral and local lesions and its frequent association with lesions of the central nervous system have led many writers to claim that lesions of this sort should lead to a thorough investigation of the central nervous system. Collier[14] quotes from Mitchell and Spiller[5] as well as from Benda,[6] Auerbach[15] and Edinger in substantiation of this view. He reports in detail five cases of disseminated sclerosis; two of neurasthenia, one of which was traumatic and the other associated with disseminated sclerosis; two cases of tabes dorsalis and one of myelitis, all of which manifested the lesions of erythromelalgia.

Lovett[1] reports three cases under the head of "intermittent limping," one of which (Case I) has distinct symptoms of erythromelalgia. The second case, though showing no physical evidence of arteriosclerosis upon palpation or x-ray examination, cannot be excluded from that category without a determination of blood pressure, and the third case seems one of traumatic neurosis, which, as has frequently been noted, may be associated with peripheral venous disturbances such as were observed in this patient. A good bibliography accompanies this report and should be consulted by those who are interested in following up the subject.

II. ANGINA CRURIS. CASES 1, 2, 3, 5, 11 AND 12.

Under this heading has been described by various authors a symptom complex which is rather different in the main from that which has been described in the previous section. Under the title of "Intermittent Limping as a Preliminary Stage of Spontaneous Gangrene," Muskat[16] presents a very exhaustive study of the subject historically, clinically and pathologically, with a brief discussion of the treatment and prognosis. The bibliography is very complete of the continental writers up to 1906, and a few references are made to British and American literature. Various other terms have been suggested for this condition, viz., "Arteriosclerotic Rheumatism," by Monteuffel; "Dysbasia Intermittens Arteriosclerotica," by Erb; "Akinesia" or "Dyskinesia Intermittens Angiosklerotica" by Oetermann; "Paroxysmale Angiosklerotike Myasthesie," by Higier, and the term used at the head of this section suggested by Walton and Paul.[4]

Clinically the sufferers from this affliction are seized with pain of a very excruciating character when they have walked a certain distance, which distance may vary from only a few yards to as great a distance as one-quarter to one-half a mile. Prickling sensation in the toes and feet, cold extremities, pallor or at most passive congestion of the feet, with local or general evidences of arteriosclerosis, seem to characterize the majority of these cases. Occasionally erythromelalgic symptoms may be present, but seem to be superimposed. Muskat[16] cites a number of different etiologic factors, viz., embolus, flat foot, cold climate, lues (22% of Erb's cases suffered from lues), gout, diabetes, excessive use of tobacco or alcohol and functional neuroses. Heredity seemed to have no influence in the etiology, and trauma only a very slight effect. The large majority of the patients were under forty years and men were much more frequently attacked than women.

In 127 cases collected by Erb, only seven were among women. In Haga's[17] series of 33 patients there was only one woman. The Jewish race is said to furnish most of the cases. Higier found 17 of his 18 were Jews. The frequency of neuroses and the common occurrence of arteriosclerosis among this race are suggested as the explanation of this observation.

Hagelstorm[18] discusses seven cases of intermittent limping and concludes that the symptoms may be regarded as an evidence of arteriosclerosis.

Patek[19] reports a case of intermittent claudication in a man of seventy-three, who had cramps, limp and loss of power in the lower limbs. These symptoms were not constant, but came on suddenly at intervals. There was no pulsation in the posterior tibials, but the dorsalis pedis vessels were patent. He regards the cause of these symptoms to be a spasm of the vessel walls and cites angina pectoris as an analogous condition. In this disease the sudden onset and violent pain are quite similar to that in angina cruris. Patek notes the fact that Bouley,[20] a French veterinarian, described the condition in horses long before Charcot drew attention to it in the human being. He cites the reported cases of Erb[21] and Goldflam,[22] which represented up to 1901 practically all the instances in literature. There were 127 in their series, 120 of which occurred in males. He also reports three other American cases besides his own.

That cases who have undoubted clinical signs of arteriosclerosis may have erythromelalgic symptoms is evidenced by the report of a case of J. G. Palley.[23] This patient the writer does not think should be classified as an instance of intermittent claudication as the author has placed it because of the predominence of the arteriosclerotic symptoms. The patient had had nearly all the known causes of arteriosclerosis except syphilis. He had suffered from three different metallic poisonings, viz., lead, arsenic and mercury, while working in the mines. He had worked for a long time at brick making in a place where he had been obliged to stand up to his waist in water. He had been an excessive user of tobacco and alcohol and he had frozen his feet.

R. H. Irish[24] records a series of observations upon the relative frequency of absence of pulsation in the dorsalis pedis vessels in cases of arteriosclerosis, and concludes that such absence is not at all uncommon in cases of general arteriosclerosis. His conclusions were based upon the observation of 80 cases,— 40 males and 40 females.

Savill,[2] after reporting upon the frequency with which he had met with vasomotor disturbances in the previous two years, and describing some of his cases, discusses the relation he believes to exist between acroparesthesia (which corresponds to the condition grouped here under the head of angina cruris), erythromelalgia, sclerodactylie and Raynaud's disease. His first case was one of erythromelalgia with slight arterial thickening and infiltration of the skin, which he proved was due to congestion only. The second case was an acroparesthesia occurring in the course of Graves' disease. The third was a sclerodactylie, which developed in a case of scleroderma, and the fourth was an early case of Raynaud's disease. Of the 35 cases which he has observed, 10 were apparently the sequels of disease of the central nervous system, while the other 25 sought treatment for the paresthesia alone.

He cites three causes of arterial hyperemia, viz., (*a*) vasomotor fatigue; (*b*) toxic substances in the circulation and (*c*) irritation of the vasodilator nerves. He divides all vasomotor symptomatic disturbances into two groups, viz., those caused by vaso-dilation and those by vaso-constriction, either of which may result in a symmetrical gangrene of the Raynaud type. He regards hyperhidrosis as related in some remote way to these conditions.

Cassirir, R.,[25] in an elaborate thesis upon the relations of the central nervous system to the processes of nutrition through the control of the vasomotor system, discusses the various theories which have been advocated and thinks that no one of them is competent to explain all phenomena. He enters into considerable detail in the consideration of acroparesthesia, erythromelalgia, Raynaud's disease, scleroderma, acute circumscribed edema and multiple neurotic gangrene.

III. RAYNAUD'S DISEASE. CASE 10 (*vide* ALSO SECTION V).

The clinical appearances of Raynaud's disease, which is apparently a much more common condition in this community, at any rate, than most of the other conditions which have been discussed, is very well described by Oppenheim.[26] The symptoms may occur by themselves or in the course of diseases of the central nervous system, e.g., in hysteria, tabes dorsalis, syringomyelia, tumors of the cord and spinal roots, epilepsy, exophthalmic goiter, etc. Oppenheim believes a neuropathic diathesis is always present. In contradistinction to intermittent limping, erythromelalgia, etc., it occurs much more often in young females. Exposure to cold, suppression of menses, trauma and emotional excitement are apparently frequently the exciting causes. It has followed infectious diseases and syphilis.

The symptoms are manifested paroxysmally as a rule, and they are usually bilateral. In contrast to erythromelalgia it is more often in the fingers than in the toes. Among the more significant symptoms we find paresthesia, dead, cold feelings in the fingers and a more or less pronounced local syncope in the earlier stages. Blood will not flow if the skin is pricked. This stage is followed after a longer or shorter interval by a regional cyanosis which in many cases deepens to blackness and gangrene. Preceding the gangrenous state there is often a bleb-like condition of the skin, the blebs containing bloody serum. Oppenheim regards the nerve degenerations which have been described as secondary and believes the disease is produced by a spasm of the arterial walls. He cites in support of this view the fact that a similar condition of gangrene has been produced by the administration of ergot. He calls attention to still another rare cause of local gangrene, viz., that type of leprosy known as lepra mutilans. He regards the prognosis as good for the majority of cases.

IV. MORVAN'S DISEASE.

A disease bearing close resemblance to the previously described conditions is that known as Morvan's disease. It is of very rare occurrence. Gowers[27] describes it as a combination of the lesions of syringomyelia and peripheral neuritis. The symptoms are those of a painful neuralgia of the extremities, more often of the upper, without loss of sensation. Whitlows and cracks develop over the skin of the fingers, and there is occasionally a loss of the digits.

(To be continued.)

OBSCURE FEVER IN INFANCY AND EARLY CHILDHOOD.

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It is safe to assume that at this age a daily rise of temperature above 99.5° F. is abnormal and the manifestation of some diseased condition. Occasional rises to this point, or even higher, are, however, not very uncommon and are apparently of but little significance. It is important before becoming alarmed and excited by a rise in temperature to be sure that it really is elevated. In one of my cases, which ran an elevated temperature both morning and evening for some weeks without any apparent cause, it was finally discovered that the family thermometer registered 2° too high. Malingering can, of course, be ruled out at this age, and hysteria is practically unknown. Temporary elevations of temperature are sometimes due to excitement and nervous strain. An elevated temperature may also be due to active exercise and over-fatigue in nervous children. In such cases the temperature is usually elevated only in the afternoon. It must be remembered in this connection that elevations of temperature occur from slighter causes at this age than in later childhood because of the greater irritability of the nervous system, and that, consequently, they are, on the whole, of less importance.

It is not my purpose to consider, except incidentally, those elevations of temperature which are obscure merely because a careful physical examination has not been made, although, unfortunately, such instances are common enough. The causes of fever in infancy and early childhood that are most commonly overlooked through gross carelessness are diseases of the thoracic organs, especially empyema. Pneumonia is often overlooked or excluded, however, because of the absence of physical signs, physicians not realizing that they may not develop for several days, or even not before the crisis. They also forget that they may be present only high in the axilla or in the middle of the back along the spinous processes, and consequently fail to find them even when they are present. An unresolved pneumonia may, in rare instances also, cause a long-continued fever. Many men fail through carelessness to find an encysted empyema or to suspect an interlobular empyema. Others exclude empyema as a cause of fever because there are no chills or sweating. In my experience these are very unusual in empyema at this age.

Endocarditis. — Endocarditis is very common in children and is very often accompanied by fever. The temperature may be elevated for weeks and months without any increase in the symptoms or change in the physical signs. While not a very serious symptom in such cases, it is, nevertheless, a sign of danger and an indication for rest.

Typhoid fever and malaria. — Typhoid fever and malaria should not cause confusion for any length of time, as an examination of the blood will quickly demonstrate the presence or absence of these diseases. It must be admitted, however, that in some instances a long-continued fever will yield to quinine although no plasmodia can be found in the blood.

Eczema. — Eczema is often accompanied by fever, which is frequently of long duration. The rise of temperature in this disease is presumably due to the absorption of toxic products from the skin. It is often associated with degenerative changes in the organs and sometimes with endocarditis, which may be the cause of the fever. The frequency with which fever occurs in uncomplicated eczema is not generally recognized, and the presence of some other condition is, therefore, suspected.

Fever in the new-born. — Holt has described a series of cases of fever occurring during the first five days of life, generally from the second to the fourth day, and accompanied by no evidences of local disease. He believes that this rise of temperature is due to starvation, because the temperature falls very rapidly when the child is put upon a full breast, when artificial feeding is begun or when water is given freely. He believes that this fever can hardly be confounded with that due to pyogenic infection, which, he says, rarely begins before the fifth or sixth day. I am inclined to be skeptical as to this condition, partly because starvation at other periods of infancy is always associated with a subnormal temperature unless there is an infection, and partly because we know that infection may occur not only during and immediately after birth, but probably also before birth, the opportunities for infection being very numerous. When infection takes place thus early fever may develop in twenty-four or forty-eight hours. The rapid fall in the temperature in these cases coincident with the ingestion of sufficient food or water may also be explained by the rapid elimination of toxic products as the result of the increased quantities of fluid taken or by the action of antitoxins derived from the milk.

Sepsis is, as already mentioned, the most common cause of rises of temperature in the new-born. It is safe to assume that a rise of temperature at this age is due to sepsis unless it is proved to be due to some other cause. The possibility of a rise in temperature from the too vigorous application of external heat should also be remembered in this connection.

Dentition. — Elevations of temperature during infancy, both acute and chronic, in the absence of any obvious cause, are often attributed to disturbed dentition. In the vast majority of instances this is not the true explanation, the real cause being some disturbance of metabolism or intestinal intoxication. There is no doubt, however, that dentition sometimes causes acute and high elevations of temperature, and it is probable that it also occasionally produces a moderate temperature of long duration. I have seen a number of these cases, of which the following are good examples:

A boy, seventeen months old, began to be fussy and a little feverish the night of April 14. The next evening the temperature was 103° F.; the next day 100° F. in the morning and 104.8° F. in the evening. On the morning of the 17th the temperature was 100.8° F., the pulse 140 and the respiration 28. There had been no symptoms beyond the fever except restlessness and sleeplessness. Careful physical examination, including the ears, showed nothing abnormal beyond marked swelling of the gums over the first four molars. The gums were lanced over all. The temperature dropped to normal during the day and did not rise again. No other treatment was given.

A girl of three years had always had some disturbance or other while cutting her teeth, such as diarrhea, vomiting, restlessness and sleeplessness. The gums had been lanced many times with great relief. In fact, she had never cut a tooth naturally, and all the teeth had been very late in erupting. She began to be feverish the night of Oct. 21, and complained of pain about one of the second molars. Careful physical examination showed nothing except swelling of the gum over this tooth. The mother assured me that this was the cause of the trouble, but, never having seen the child before, I doubted the accuracy of her diagnosis. The temperature continued between 100° F. and 102.5° F. for twelve days. No other symptoms developed except occasional vomiting. The physical examination continued negative except as to the gums. The urine was normal, there was no leucocytosis, the blood showed no plasmodia, the Widal test was negative. The gum was very dense and hard over the tooth. It was incised several times, each time with temporary relief of the symptoms and a drop in the temperature. Finally a large piece of the gum over the tooth was removed and the tooth came through. The temperature immediately dropped to normal and remained there, while the other symptoms ceased at once. This story was repeated with each of the other second molars, and to a less degree with the six-year-old molars, proving that dentition was the real cause of the fever.

Toxic absorption from tonsils and adenoids. — The lymphoid tissue of the fauces and nasopharynx is comparatively greater in infancy and early childhood than at any other period of life, and, being functionally very active, and in process of active growth, is especially liable to disease at this age.

It is hardly necessary to speak of acute inflammations of the tonsils and adenoids, as they produce well-marked symptoms, and the cause of the fever is not at all obscure. Toxic disturbances from chronic disease of these structures are, however, very often unsuspected and overlooked. These are unusual from the tonsils in infancy, but not very uncommon in early childhood. They are fairly common, I believe, from adenoids at both ages.

When, from any cause, the orifices of the crypts of the tonsils have been obstructed, leucocytes and desquamated epithelium collect in them. The contents then become infected by bacteria, and decomposition results. The absorption of the toxic products of decomposition causes a continued fever and disturbance of the general condition. This process may occur in small as well as in large tonsils. In many cases, moreover, the orifices of the crypts are not visible, being hidden behind the pillars, and the condition is consequently easily overlooked. The rapid improvement in the general condition and the immediate subsidence of the fever after the removal of the tonsils proves the accuracy of the diagnosis in these cases.

The most marked symptoms of a mild grade of inflammation of adenoids may be disturbance of nutrition and irregular, more or less continued fever. These are almost always accompanied, however, by other symptoms of adenoids, such as frequent colds, slight snuffles, irritating cough at night and, in older children, the symptoms of the dropping of mucus into the pharynx. In these cases, also, the cause of the fever is the absorption of the toxic products of bacterial growth. The fever ceases almost immediately after the removal of the adenoids.

Otitis media. — Otitis media, if not the most common, is certainly one of the most common causes of fever of obscure origin in infancy, as in many cases the fever is the only symptom outside of those of general discomfort or of indefinite pain. It is very generally overlooked because of the general misapprehension as to the symptomatology of otitis media at this age and the almost universal lack of appreciation of its frequency. Inflammation of the middle ear may cause a high temperature of short duration or a lower temperature of long duration. In some cases the temperature may be irregular and lead to the suspicion of malaria or tuberculosis. The examination of the middle ear with a speculum should never be neglected when an infant has a fever the origin of which is in doubt. It is especially indicated when there are, or have been, diseased conditions of the nose or naso-pharynx present, even if these are very slight. Inflammation of the middle ear is less likely to cause confusion in childhood, as the patients are then usually old enough to complain of pain or discomfort in the ear. I have known, however, a child to refer the pain of otitis media to the elbow and another to the knee. The following cases may serve to emphasize the importance of the disease in this connection.

A girl, thirteen months old, had had a slight "cold in the head" for some days. After four days she became feverish, began to cough, was drowsy and refused her food. The temperature was 103° F., the pulse 160 and the respiration 40. Physical examination was entirely negative except for slight reddening of the throat and reddening and bulging of both drums. Paracenteses were followed by a free discharge of pus from both ears and the immediate fall of the temperature to normal.

A boy, seven months old, the child of a physician, had had a temperature ranging between 100° F. and 102° F. for a week. There were no other symptoms beyond loss of appetite, weight and color, and some irritability. The physical examination was entirely negative except for reddening of both drums and a little bulging of one. Paracentesis was immediately followed by a fall of the temperature to normal.

A boy, two years old, had had a fever for three weeks, and during the last week had had several chills which were not affected by quinine. He had had no symptoms outside of those of general constitutional disturbance except a slight coryza and cough. Physical examination showed nothing beyond reddening of the throat and reddening and bulging of the right drum. Paracentesis was followed by a profuse discharge of bloody serum and a rapid fall in the temperature.

A boy, eight months old, had run a temperature between 99° F. and 104° F. for two weeks. He had had several convulsions and at times rigidity of the neck. The temperature was 101° F., the pulse 120, the respiration 60. Examination was negative except for redness of the right drum. In the hope that resolution might take place, paracentesis was not done. Spontaneous opening of the drum two days later was followed by relief of symptoms and the disappearance of the fever.

Cervical adenitis. — The connection between fever and acute inflammation of the cervical lymph nodes is, of course, always recognized; that with sub-acute or chronic inflammation is sometimes overlooked or it is supposed that the trouble in the lymph nodes is not sufficient to account for the elevated temperature. In such cases the question always arises as to whether or not the condition is tubercular. It is often impossible to answer this question without a tuberculin test. A general rule, which I have usually found satisfactory, is that enlargement of the cervical lymph nodes secondary to some acute inflammatory condition of the nose, mouth or throat is usually not tubercular, even if long-continued, and that enlargement without obvious cause usually is tubercular. It is surprising how long the temperature may continue elevated in connection with enlargement of the cervical lymph nodes, which, judging from the onset and the ultimate disappearance of the enlargement, is almost certainly non-tubercular.

Bronchial adenitis. — Much has been written as to the association of enlargement of the bronchial lymph nodes and obscure and long-continued elevation of temperature. Reasoning from the frequency with which cervical adenitis occurs in connection with inflammatory processes in the nose and throat, it is fair to assume that bronchial adenitis occurs with equal frequency in connection with like processes in the trachea, bronchi and lungs. It also seems fair to assume that bronchial adenitis, whether tubercular or not, may, like cervical adenitis, be associated with a long-continued elevation of temperature. It is extremely difficult to prove this, however, as all signs given as characteristic of this condition, such as dullness in the middle back and under the sternum, diminished respiration on one side, bronchial voice along the dorsal spinous processes, venous hum over the manubrium on extension of the neck, lymphocytosis and paroxysmal cough, may be present in other conditions, are frequently wanting when there is enlargement of these glands and are consequently unreliable. Radioscopic examination is more certain in its results, but is, in my experience, also unsatisfactory. In spite of the difficulty or even impossibility of proof, I am convinced that certain cases of prolonged, unexplained fever are due to bronchial adenitis, and that this is in a moderate proportion of cases non-tubercular.

Pyelitis. — Another cause of obscure fever, both acute and chronic, more common in infancy than later, is bacterial infection of the urinary tract. This is usually secondary to some other disease, especially of the gastro-enteric tract, but may apparently sometimes originate *de novo.* The invading organism is usually the colon bacillus. In some cases the urine merely contains large numbers of bacteria; usually it also contains many pus cells, often many caudate cells, not infrequently a few hyaline and fine granular casts or squamous cells. The amount of albumin is generally small and the reaction acid. Judging from the character of the sediment and the reaction of the urine, the main seat of the lesion is in the pelvis of the kidney, the renal tissue and the bladder being, as a rule, but little or not at all affected. In the vast majority of cases there is nothing whatever in the symptomatology to call attention to the urinary tract. In some cases, however, there may be a purulent deposit on the napkins, and in rare instances there is pain on micturition or retention of urine. The diagnosis is usually first made when the urine is examined, although experience leads one to suspect this condition when the temperature is elevated without definite cause, especially after some acute enteric disease. The temperature is usually high and very irregular, the curve in many cases suggesting confined pus. In others, however, it is moderate and continued. The following cases illustrate this condition:

A girl, five and one-half months old, that had been perfectly well, suddenly became fussy and began to cry out and to have a high fever. Physical examination was entirely negative except for very questionable reddening of one drum. Paracentesis was followed by no discharge and no relief of the fever and restlessness. She took her food fairly well and digested it perfectly. The temperature ran between 103° F. and 105° F. for eleven days, when it became very irregular, ranging from normal to 105° F. On one occasion there was a chill. Examination of the urine on the seventh day showed only bacteria, but on the fourteenth day it was full of pus. This was complicated by a non-purulent perinephritic inflammation requiring operation. The temperature continued elevated for two months and the urine was not entirely clear for several months more.

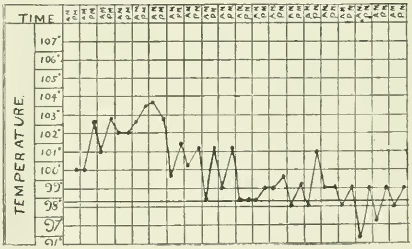
A boy, twenty months old and previously well, had a moderately severe attack of acute intestinal indigestion early in September, from which he quickly recovered. About the middle of September he had an infectious diarrhea from which he had practically recovered, when, on Oct. 4, his temperature suddenly rose to 103.5° F., and micturition became painful. He retained his urine as long as possible and screamed when it was passed. The temperature ran between 99° F. and 103.5° F. The urine had stained the diapers yellow. His appetite was fair and the movements normal. Physical examination on Oct. 6 showed nothing whatever abnormal until the urine was drawn and examined. It was found to be very turbid and to contain large shreds. It was full of pus cells, single and in clumps, but contained no casts or squamous cells.

Anemia, rickets and syphilis. — Anemia and rickets are often associated with fever for which there seems no very obvious cause. I am inclined to think, however, that in these diseases the temperature is not due directly to them but to the causative disturbances of digestion and metabolism which will be spoken of later.

A great deal has been written as to the importance of syphilis in the etiology of obscure fever. While this may be true in adult life and later childhood, I doubt if it cuts much of a figure in infancy and early childhood. At any rate, I have never to my knowledge met with it.

Tuberculosis. — The tendency among the majority of physicians is to attribute every long-continued fever in infancy and early childhood for which it is impossible to find any plainly evident cause to hidden tuberculosis. The causes of this tendency are presumably the well-known facts that tuberculosis in early life is very prone to involve the lymph nodes primarily and to remain localized in them, and that when it becomes disseminated it progresses rapidly. In neither case are the physical signs usually definite and in many instances they are entirely wanting. When the internal lymph nodes are involved there are no signs unless they be those from pressure upon neighboring organs. Enlargement of the tracheobronchial glands should be most easily recognized. How difficult this is has already been mentioned. The signs of acute miliary tuberculosis are usually practically *nil* in early life unless the meninges are involved, when they are, of course, usually very marked. In infancy there is a form of disseminated tuberculosis in which the number of foci is much less than in acute miliary tuberculosis and in which they have time to grow to a considerable size, becoming as large as peas or beans or even larger. These foci are, however, seldom large enough or numerous enough to give definite physical signs, and the disease manifests itself merely by a disturbance of nutrition, which is usually accompanied by an elevation of temperature. The course is a chronic one, running weeks or months. I am in the habit of speaking of this condition as chronic diffuse tuberculosis. The following case is a fair example of this type:

A girl, eighteen months old, whose mother had died a year previously of pulmonary tuberculosis, was admitted to the Infants' Hospital with a history of general disturbance of nutrition with no definite symptoms whatever. The physical examination was entirely negative. The temperature curve was as follows:



She died about four weeks after admission to the hospital, and during that time showed no abnormal physical signs whatever. She took her food well, there was no vomiting, the movements were normal, there was steady loss of weight. The autopsy showed chronic tuberculosis of the bronchial and cervical lymph nodes, caseous and miliary tuberculosis of the left lung, a solitary tubercle of the cerebrum and acute tubercular meningitis.

It is this chronic diffuse tuberculosis and tuberculosis of the internal lymph nodes which most often cause a continued elevation of temperature without physical signs. Tuberculosis of other organs in early life usually runs such an acute course and is accompanied by such definite physical signs that it is difficult to overlook or mistake it. The diagnosis of chronic diffuse tuberculosis and tuberculosis of the internal lymph nodes during life is always difficult and often impossible without the aid of the tuberculin test in some form. In cases in which the tuberculin test is inadvisable the presence of a fluctuating opsonic index may be of great value in diagnosis. A history of definite exposure to tuberculosis is also of great assistance in diagnosis. The absence of such a history does not, of course, in any way rule out tuberculosis.

Judging from the frequency with which tuberculosis is found at autopsy in childhood, and from the number of healed tubercular foci found in later life, it would seem probable that a large proportion of the obscure fevers of infancy and early childhood are due to tuberculosis. My experience leads me to believe, however, that hidden tuberculosis is comparatively seldom the cause of continued elevation of temperature in early childhood, and that in the majority of cases in which the fever is supposed to be tubercular in origin, it really is due to disturbances of digestion or metabolism. The explanation of this comparative infrequency of tuberculosis as a cause of obscure fever in infancy and early childhood is presumably that at this period of life tuberculosis tends to dissemination and a rapidly fatal course. Chronic latent cases are consequently relatively rare.

Intestinal toxemia or auto-intoxication. — It is well known that the intestinal contents are toxic under normal conditions and that under certain pathological conditions the toxins produced by the bacterial fermentation of foods in the intestinal canal greatly increase this toxicity. The poisonous albumoses, which are the intermediate bodies formed in the digestion of albuminous foodstuffs, probably contribute more to the toxicity of the intestinal contents than do the products of carbohydrate or fat digestion. Bacterial fermentation is, however, the chief source of the intestinal toxins. These may come from the bodies of dead bacteria, be the excretions of living bacteria in the intestinal canal or be substances produced by bacteria from the culture media. The last are probably the most important. Under normal conditions these substances are robbed of their toxicity in their passage through the intestinal epithelium and liver cells. These protective organisms are not as strong in infancy and early childhood as they are later. It is important to remember the important rôle which the liver plays in protecting the body against intestinal toxins. They can reach the general circulation only by passing through the liver. In their passage they are, under normal conditions, rendered harmless. The liver thus protects the general circulation. In some instances, however, the liver itself is at fault. This function of the liver is also probably not as well developed in early life as later. The intestinal secretions are also probably not as abundant or as active in infancy and early childhood as later. For these reasons the infant and young child is more exposed to and less able to resist auto-intoxication than are older children and adults. In infancy and early childhood, moreover, on account of the immaturity and irritability of the nervous system, a small quantity of poison which in later life would cause few or no symptoms may produce very severe ones. Acute intestinal toxemia is especially common, therefore, at this age. As the child grows older and the nervous system more resistant, the acute intoxications become less important and the chronic more.

The accurate diagnosis of intestinal auto-intoxication on a chemical basis is not an easy one. It is impossible to tell much from the examination of the stools. They show merely the amount of putrefaction, nothing as to the amount of auto-intoxication. They show nothing as to what part of the toxemia is due to abnormal digestion and what to bacterial putrefaction. Among other bodies produced by bacterial action on the intestinal contents are various aromatic bodies, such as the phenols and indols. These are probably not the true toxic bodies, but are formed parallel with them and can thus serve as an index of them. These are eliminated in the urine, chiefly in the form of indican and the ethereal sulphates. An excess of these substances in the urine is, therefore, valuable evidence of intestinal auto-intoxication. The absence of an increase in them does not, however, rule out intestinal auto-intoxication.

Acute elevations of temperature, due to intestinal toxemia, in infancy and early childhood seldom cause trouble in diagnosis, as they are almost always accompanied by marked symptoms, such as vomiting, diarrhea or obstinate constipation. In some instances, however, these symptoms may be so slight as to apparently not account for the fever. The following case is an example:

A girl of two years convalescing from whooping-cough had been indiscreetly fed for some months. Three weeks before, after eating cucumbers, ice cream and baked beans, she had vomited and had a temperature of 104° F. After catharsis and irrigation of the bowels the temperature dropped to 101° F., where it remained for several days, and then without any indiscretion in diet rose again to 105° F. It dropped again after catharsis and irrigation of the colon, but rose again in a few days, and so on. The diet had been peptonized milk. There had been no vomiting. The bowels had moved once or twice daily and the movements had been yellow, but with much mucus and a foul odor. The whooping-cough was slight and the lungs remained clear. The physician in charge feared that he had overlooked some other cause for the fever, as the intestinal disturbance hardly seemed sufficient to account for it. Careful physical examination, including the ears and the urine, failed to find anything abnormal, however, and with time, careful feeding, laxatives and irrigations the temperature finally dropped to normal after several weeks and remained there. Nothing outside of the intestinal condition was ever found to account for the fever.

Davy and Smith have both described cases of high temperature in children coming on rapidly and lasting a number of days as the result of the ingestion of an excess of carbohydrates, especially if improperly cooked. In them the fever was entirely out of proportion to the evidences of indigestion. They consider that the fever is due to the absorption of the toxic products resulting from abnormal fermentation of the carbohydrate food. They recommend as treatment the restriction of carbohydrate foods and advise a diet of meat, fish and green vegetables. They also think that milk is to be avoided in these cases. Cases of this sort, due sometimes to an excess of carbohydrates, especially in the form of sweets, and sometimes to the improper cooking of starchy foods, are, I think, not uncommon. In these cases the temperature is often out of proportion to the symptoms of intestinal irritation and may, therefore, draw the attention away from the intestinal tract. The prompt response to catharsis and restricted diet proves, however, the nature of the disease. Personally I think that milk is most useful and not to be feared in these cases. The sugars have to be in many cases practically eliminated from the diet, while the starches may be given in reasonable amounts provided they are properly cooked.

Long-continued elevations of temperature without very evident cause in infancy and early childhood are certainly very often, and, in my opinion, probably most often, due to a mild grade of intestinal toxemia. The temperature is usually not very high, and is often normal in the morning. In some cases it may run for weeks or months with practically no intermissions. In others it is intermittent, being elevated for days or weeks at a time, then normal for days or weeks, and so on. In most instances the general condition is more or less impaired, but in others the appearance is that of robust health. In many instances there are symptoms of disorder of the digestive tract, such as anorexia, occasional headache, slight flatulence, occasional vomiting, constipation or more or less undigested movements. These symptoms are often intermittent while the temperature is constant. In others, however, these symptoms are often overlooked by the parents and can be elicited only by the most careful and minute questioning and attention to details. A capricious appetite, relative constipation, although the bowels move regularly, or an occasional undigested movement are not infrequently the only symptoms discoverable. In other instances even the most careful investigation fails to find any symptoms of this sort, and yet the temperature yields to regulation of the diet. Neurotic children and the children of neurotic parents are more subject to these elevations of temperature than others. The following case is an example of long-continued fever due to intestinal toxemia:

A boy, fourteen months old, the child of a physician, had been injudiciously and very much over-fed. The temperature had been taken regularly for the last five weeks. It had been normal but twice, but it had never gone over 100° F. His appetite was fair. There was no nausea or vomiting. His bowels moved daily. The movements were smooth, the first part constipated, the rest not. There was some mucus and the odor was foul. He was very active and seemed well except for the fever. The physical examination was entirely negative. He was put on milk and starches and the bowels kept slightly relaxed with milk of magnesia. He continued to have a slight fever for about three months, after which it ceased. He had no symptoms during this time except an occasional undigested movement, appeared well and active and gained in weight.

All agree that intestinal toxemia is especially likely to occur in children who are overfed or improperly fed, and that it is especially likely to develop in warm weather when the digestive powers are enfeebled by the heat and when bacterial infection of the food is more common. All agree, also, that lack of fresh air, sunlight and exercise are important predisposing factors. There is considerable difference of opinion, however, as to what element or elements in the food are most likely to favor the development of this condition. Some believe it is the proteids, others the carbohydrates, and still others the fats. Certain others believe that milk is usually at the bottom of the trouble, while others attribute it to the fat in the milk. My own experience leads me to believe that in the majority of the chronic cases there is decomposition of the proteids and that the symptoms are comparatively seldom due to an excess of carbohydrates. Such cases usually yield fairly promptly to a milk and starchy diet combined with proper hygiene and mild laxatives.

The object of the milk and starchy diet is to change the intestinal culture medium and to thus modify the intestinal flora. Disinfection of the intestine is impossible; sterilization of the food is of little or no value. The carbohydrate diet, however, furnishes a medium on which the putrefactive bacteria do not thrive, favors the growth of antagonistic bacteria and thus diminishes the proteid putrefaction and intestinal auto-intoxication. Buttermilk is often useful in these cases for the same reason. Tissier and others have even given cultures of the bacillus acidi paralactici in acute cases of this sort with good results.

I have seen, however, a number of children in which long-continued fever was associated with some of the symptoms of what I am in the habit of calling chronic duodenal indigestion, namely, a tendency to hard and white, or to soft, clay-colored stools, sometimes associated with mucus. Many of these children have also had occasional attacks of acute duodenal indigestion, with vomiting of bile, slight jaundice and acute exacerbations of temperature. Some of them have had a continued fever for months, and several of them intermittently for years. The trouble in these cases is presumably an inability to digest fats and to a less extent carbohydrates, especially sugars. In this class of cases a long-continued diet of proteids, such as skim milk, white of egg and lean meat, with a small amount of starch and fruit, and in older children green vegetables, has given the best results. Here, too, hygiene, fresh air, sunlight, exercise and freedom from nervous strain are of great importance. The treatment in this class of cases must be long-continued, for relapses are common.

Several of the patients belonging to the class just described have had attacks of recurrent vomiting apparently due to acid intoxication. At any rate, the acetone bodies have been present in the breath or urine immediately before or at the onset of the attacks. This suggests still more that in this class of cases the chief fault lies in the digestion of the fats. It also suggests even more strongly that in this class of cases, and very probably in others also, there are obscure disturbances of metabolism of which we have no comprehension, as well as intestinal auto-intoxication. It is very possible, moreover, that these disturbances of metabolism may play a greater part in the etiology of the obscure elevations of temperature apparently associated with disturbances in the digestive tract than the absorption of intestinal toxins. It also reminds us how little we really know and how much we have to learn about these matters.

Certain authors, as already mentioned, believe that in many instances continued fever in infancy and early childhood in connection with disturbance of the digestive tract is due directly to milk, the milk, in their opinion, acting in some way as a poison. Personally, I believe that such cases occur, but much less commonly than is often supposed. I doubt very much the existence of a congenital idiosyncrasy to cows' milk, but feel very sure that such an idiosyncrasy may be temporarily developed. It is very probable that in such cases there is a lesion of the intestinal wall, allowing the passage of the heterogeneous albumin, as it seems hardly possible that the almost immediate elevations of temperature following the ingestion of small amounts of milk can be due to the decomposition of the milk by bacterial action and the absorption of toxins.

While I have seen many cases of indigestion, both gastric and intestinal, some of which were accompanied by fever, which were undoubtedly due to an excess of fat in the milk mixtures, I cannot agree with those authors who believe that it is always the fat in the milk which is accountable for the elevation of temperature in this class of cases. The reason I cannot agree with them is that I have seen skim milk, whey and buttermilk cause the same elevations of temperature in these patients as whole milk or cream, the presence or absence or amount of fat making no difference whatever. In these cases it is milk as milk which causes the trouble and not any especial constituent of the milk, unless it may be that it is the heterogeneous albumin which it contains which acts as a poison. The following cases are examples of those in which the ingestion of milk is accompanied by a rise of temperature:

A girl, eight months old, had had repeated slight attacks of indigestion, both gastric and intestinal, for three months. Previous to this time she had been on the ordinary diet for a child of her age, but since then had had only milk and barley water and broth. The last two weeks she had been running a temperature between 99° F. and 101° F., had been very irritable, taken her food poorly and had had three or four watery, yellow, foul movements, containing curds, daily. Physical examination was entirely negative except that she was flabby and a little pale. All milk was stopped and she was put on cereals, beef juice and broth. Improvement was almost immediate, the appetite returned, the movements dropped to one a day and were normal in character, the irritability ceased and the temperature dropped to normal. After a week two ounces of milk were added to each feeding of barley water. Within twelve hours the temperature was up again and all the symptoms had returned. The mother could not believe that the trouble was the milk and kept on with it for a week, although the fever and other symptoms persisted. The milk was again stopped, with, as before, an immediate cessation of the fever and other symptoms. It was several months before she was able to take milk.

A boy that had been well except for moderate indigestion in the early months had been decidedly overfed during his tenth month, the milk being very rich in fat. Loss of weight, vomiting and undigested movements were the results. Directions as to feeding were not followed during the next few months, except spasmodically, so that when he was fourteen months old his condition was a serious one. He had lost much strength, weight and color, was very irritable, had four or five undigested, foul movements with mucus daily, and ran a temperature between 99.5° F. and 100° F. Physical examination was negative except for distention of the abdomen and slight signs of rickets. During the next three months he was under the care of a trained nurse and all directions were carefully followed. Milk in some form, whey, skim milk and whole milk, but never cream, always formed a part of his diet. He gained considerably in strength and color and a little in weight, but was very peevish and constantly ran a temperature between 99.5° F. and 101° F., and continued to have several very large, loose, undigested, but extremely foul movements daily. Milk in every form was then cut out. Improvement was almost immediate. The foul odor of the movements ceased after a few days, and the temperature dropped to normal in about a week and remained there. Three months later he was able to take a little milk without being upset, but even after six months, when two years old, he could not take more than eight ounces a day without a return of the fever and the foul odor of the movements.

Finally, there is a class of cases of continued fever in infancy and early childhood in which the most careful examination fails to find any cause for the fever, in which no modification of the diet is of any avail and in which the general condition is unaffected, the child being apparently well and gaining normally in weight. The temperature may remain elevated for many weeks or even months in such cases and finally cease without any cause for it having been discovered. The most reasonable explanation of the fever in these cases is, it seems to me, some obscure disturbance of metabolism. The following case is an example:

A girl of two years had a slight cold lasting about a week. The temperature, which was first taken during the cold, did not drop when the child recovered, but continued elevated. To make a long story short, it ranged between 100° F. and 101° F. in the morning and 102° F. and 104° F. in the afternoon for eleven months, finally coming slowly down to normal and remaining there. During this time she appeared perfectly well in every way and gained steadily in weight and height. Repeated physical examinations failed to show anything abnormal. The urine was always normal and the blood never showed any parasites or abnormalities in the number of red or white corpuscles. She is now, four years later, an exceptionally large, strong and healthy girl.

Such cases justify the conclusion that if a careful study and thorough examination of the child does not reveal the cause of the fever, there is. in the vast majority of cases, nothing serious the matter and no cause for anxiety.

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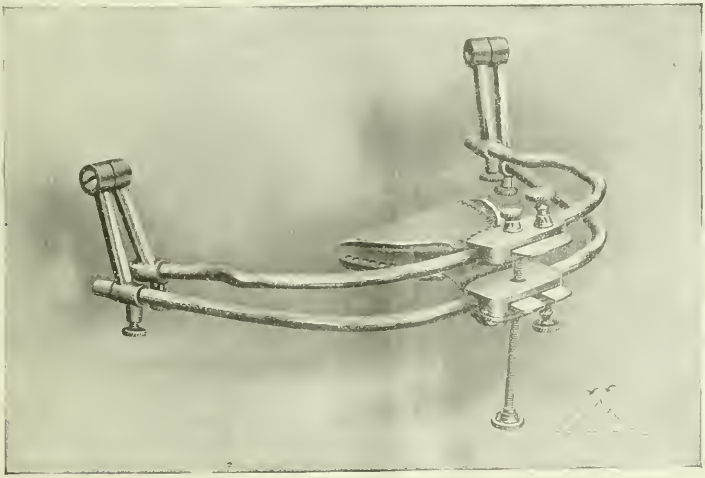
New Instrument.

AN INSTRUMENT FOR SEPARATING THE JAWS.

BY WILLIAM ROLLINS, BOSTON.

The instrument is made on the following principle: In a device for separating the jaws, in order to secure even pressure on the teeth, a line passing through the hinges of the lower jaw should pass through the axes about which the separating blades of the instrument turn as the mouth is opened. As jaws vary in size a provision should be made for adjusting the separating blades in reference to the axes about which they turn. In the instrument illustrated there are two methods of doing this, though only one is necessary. It is desirable to have several sets of blades for jaws of different sizes. To use the apparatus, the thin tempered steel blades are pushed between the teeth up to their rims, the position of the hinges being then adjusted in accordance with the principle stated. When a sufficient space has been made, a more even pressure on irregular teeth may be ensured by the use of guttapercha in the separating blades.



Instrument for separating the jaws

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Clinical Department.

SOME OBSERVATIONS ON ACETONURIA.

BY ALLEN G. RICE, M.D., SPRINGFIELD, MASS.,
Assistant Visiting Surgeon to the Springfield Hospital.

Through the kindness of Dr. M. F. Gavin and Dr. Paul Thorndike, visiting surgeons to the Boston City Hospital, on whose services the cases furnishing data for these observations occurred, I am permitted to present this article.

The following case, admitted to the Boston City Hospital during my term as house-officer, was the cause of my investigation of this subject.

J. H. Male. Fourteen. Schoolboy.

F. H. — Unimportant.

P. H. — Measles in childhood. Otherwise always well and strong.

P. I. — Patient states that yesterday afternoon, following prolonged sea-bathing, he was seized with cramplike pains all over the abdomen. His bowels have moved once and he has vomited several times since without relief. Feverishness and pain kept him awake all night. The pain is now localized in the right side of the abdomen low down. There is marked tenderness at the site of the pain.

P. E. — Well developed and nourished. Face is flushed. Temperature 102°, pulse 124, respirations 26. Lies with his knees drawn up. Heart, lungs and extremities are normal.

Abdomen is slightly distended. There is considerable rigidity of the abdominal muscles of the right side, most marked over the appendix area. There is extreme tenderness at this point. No masses felt. Urine normal.

Operation. — Under ether a swollen, red and markedly inflamed appendix was removed. As the process was confined to the appendix, the abdomen was closed tight in layers.

Convalescence. — Patient's temperature became normal on the second day and he was then free from all symptoms, subjective and objective. On the fourth day without apparent cause he began to vomit, first food and then thin, watery, colorless material which later became bile-stained. There was very little nausea. His temperature remained normal, but his pulse began to climb and to grow feeble. He looked gray and extremely sick, showing marked exhaustion. Urine showed acetone and diacetic acid.

Treatment. — Nothing by mouth. He was given high in the rectum a saturated solution of sodium bicarbonate continuously by the drop method. He received two pints in six hours and retained it all. The vomiting had then ceased, the pulse had slowed down and improved in quality, and the patient looked much better. He was then given sodium bicarbonate 20 gr. every hour by mouth. The next day his urine was normal and the alkali was therefore omitted. He was then cautiously fed. His convalescence was thereafter normal and uneventful.

The case was of peculiar interest to me because of its apparent analogy to similar reported cases. The detection of acetone in the urine led me to suspect it to be a case of acid intoxication. The prompt improvement following almost overwhelming doses of alkali seemed to confirm my suspicions. Hoping that I might forestall similar attacks in other operated cases, I instituted the following régime. The following specimens of urine from every operated case were examined for acetone and diacetic acid.

(1) The first urine passed after operation.

(2) A specimen of the twenty-four-hour amount daily for the first seven days.

If at the routine examination of the urine on the patient's admission to the hospital acetone was found, the case was excluded from this series. Only cases of post-operative acetonuria were considered. Cases showing sugar in the urine were also excluded. Otherwise the cases were taken just as they came, irrespective of the condition demanding operation. In all I was enabled to tabulate a series of 202 cases. The statistics are most interesting and I think warrant the drawing of certain conclusions. The starting point of this investigation is the examination of the urine, not the occurrence of symptoms.

In this series of 202 cases, acetone was found in 179, or about 90%. Of these 179 cases only 17, or about 10%, showed symptoms other than those incident to any post-operative case, symptoms which seemed to point to an acid intoxication. In only 2 cases, the one reported above and one other which was fatal, were the symptoms at all severe. In the remaining 15 cases the symptoms never gave any occasion for alarm. Two cases showed acetone in the first urine passed after operation; 8 in the first day's urine; 52 in the second; 124 in the third; 12 in the fourth; 3 in the fifth; 1 in the sixth; and none in the seventh. The second and especially the third day after operation are, therefore, the commonest times for acetone to appear. After the fourth day it was rare. The urine was not examined for acetone after the seventh day unless the patient's symptoms persisted. Every urine was tested for diacetic acid as well. It is interesting to note that diacetic acid was never found unless acetone was also present; that of the cases with acetone in the urine and free from symptoms, none showed diacetic acid; that of the 17 cases showing both acetone and symptoms, only 2, the cases with severe symptoms, showed diacetic acid. This pathological constituent was found, therefore, in about 1% of the cases.

Of the 17 cases showing acetone and accompanied by symptoms, in 1 acetone was detected in the first urine after operation; in 1 in the first day's urine; in 5 in the second; in 9 in the third; in 1 in the fourth; in 1 in the fifth; and in none in the sixth and seventh. Again is shown the tendency of acetone to make its appearance during the second and third days, and rarely after the fourth. The 2 cases with severe symptoms first showed acetone on the third day; diacetic acid on the third and fourth days respectively.

The severity of the operation performed or the seriousness of the pathological condition demanding operation seemed to have no influence in determining the subsequent presence of acetone; for acetone was found after operation for the following conditions: appendicitis, fractures simple and compound, gastric ulcer, carcinoma, localized septic processes, extra-dural hemorrhage, salpingitis, fecal fistula and hemorrhoids. Both cases showing diacetic acid, and they were likewise the cases with severe symptoms, had undergone abdominal section. Of the 17 cases with symptoms, 9 had had abdominal operations; 2 had had hemorrhoids burned off; 1, an amputation; 2, cancer of the tongue; 3, kidney operations.

As 90% of post-operative cases show a condition of acetonuria and only 10% show symptoms, it is evident, in order to cause symptoms, either that a certain percentage of acetone be present or that other as yet undetected pathological constituents be present as well. Brackett, Stone and Low, in a series of cases reported from the Boston Children's Hospital, conclusively proved by exhaustive quantitative analyses that the symptoms from acetonuria were in no wise dependent on the amount of acetone present. Acetone, moreover, according to von Jaksch, de Boeck and A. Slosse, is a normal constitutent of the urine in about the proportion of 1 mgm. in 100 gm. Acetone alone has been injected into healthy animals without giving rise to symptoms. We are forced, then, to the conclusion, which is now generally accepted, that the symptoms are not due primarily to acetone, but that acetone is the indicator, forerunner and concomitant of other unknown chemical substances which are the real cause of the symptoms. The presence of acetone in the urine is probably a manifestation of the intoxication due to various fatty acids following some pathological change in metabolism. The exact cause of this change remains a mystery, but that it is of some importance is evidenced by the fact that fatal cases have been reported following operation when the only pathological condition clinically detected has been acetonuria.

Pathologically the findings at autopsy in the few fatal cases are lamentably inconclusive. In the one fatal case in this series, in addition to acetone and diacetic acid in the urine, a certain degree of fatty infiltration or degeneration of the liver was also found. There was absolutely no other pathological change detected, and the findings at this one autopsy agree perfectly with those in other reported post-mortem examinations.

As for the clinical evidence of this condition other than the detection of acetone in the urine, I can only mention my experience with the same 17 cases. The first indication of impending trouble, and this manifests itself before acetone can be detected, is a peculiar apathy and a marked distaste for food. As a rule, persistent vomiting sets in within from four to eight hours. I believe from a study of this series of cases that vomiting never occurs until acetone appears in the urine. Concurrent with the vomiting the breath has a characteristic, pungent, sweetish odor not unlike that of chloroform. It was not at all unusual to find this odor so strong as to be noticeable quite a distance from the patient's bedside. The persistent vomiting without apparent cause is perhaps the most conclusive symptom; in the mild cases it was colorless, copious and watery, with a foul, acid taste and odor; in the severe case reported above it became dark and bile-stained; in the fatal case it had a coffee-ground appearance for the last few hours before death. Within a very short time after the onset of vomiting, the patient's general appearance becomes extremely bad; his countenance turns gray and cyanotic, with sunken cheeks and lusterless eyes. Between the paroxysms of vomiting an almost uncontrollable restlessness was sometimes observed. In a few hours the patient is in a condition of extreme exhaustion, cold, clammy skin and a rapid, low tension pulse. Except in the severe and fatal cases, the temperature remains normal. Death seems to result from the failure of pulse and respiration.

As acetonuria is now commonly accepted as conclusive evidence of an acid intoxication, the treatment of the condition by the administration of alkalies is rational and well recognized. In spite of recent literature offering evidence to the contrary, I believe that sodium bicarbonate in overwhelming doses is almost a specific and that its failures to effect cures in some cases are comparable to the occasional failures of the well-known specifics in the fulminating cases of malaria and syphilis. The one fatal case in this series, general peritonitis, was to all intents and purposes beyond human aid anyway. It is obligatory to give nothing by mouth, for even water aggravates the vomiting. The sodium bicarbonate must be given in large doses as soon as the condition is recognized and continued not only until vomiting ceases but until the general appearance improves. Slow, continuous rectal administration of a saturated solution through a high rectal tube is most satisfactory and efficient. Rarely is any discomfort complained of, and in these 17 cases the solution was always readily and completely absorbed. Except in the one fatal case vomiting ceased promptly and the patient's general condition showed most gratifying improvement. In the fatal case a pint of one-half saturated solution was given subcutaneously about twelve hours before death. A slight improvement and a short respite from vomiting ensued, only to be followed in a few hours by an aggravation of all symptoms. I would hesitate to use the subcutaneous route except in desperate cases because of the tendency of sodium bicarbonate toward abscess formation. Moreover, the rectal route is sufficiently rapid. Of course ordinary supportive treatment is indicated for the failing pulse, and it is well to encourage elimination in every possible direction.

While I have made no attempt to explain the cause of acetonuria, I feel that this series of cases may help some one else in some slight degree toward the solution of this most perplexing problem in metabolism. Acetonuria has been reported time and again in various conditions: diabetes, starvation, malignant disease, digestive disturbances, septic processes, infectious fevers, pregnancy, auto-intoxication, morphinism, phosphorous poisoning, shock, uremia and others. Acetone is a definite chemical substance. Therefore there must be somewhere some common factor in these various ailments mentioned above which gives rise to metabolic changes which result in an overproduction of acetone. This series of cases shows but two common factors: first, a general anesthetic, ether; secondly, the starvation in varying degrees which every post-operative case is more or less subjected to. Acetonuria follows starvation alone. In two cases in this series it followed a general anesthetic and the loss of one meal in healthy, vigorous men, so that we may almost say that it follows etherization alone. With the present state of our knowledge in mind, I believe starvation to be the most predisposing antecedent of acetonuria. In this series it is well to note that the greatest number of cases showed acetone for the first time on the third day after operation, which is generally the day of maximum starvation. Moreover, cases of abdominal section seemed most disposed to acetonuria and, as a rule, such cases suffer the greatest degree of starvation. Cases coming to operation after days perhaps of semi-starvation were prone to show acetone, if they showed it at all, sooner after operation than other cases. It seems incredible that the psychical element is sufficiently powerful when sensitive, high-strung women with well-marked nervous temperaments escape, and dull, stupid, apathetic teamsters succumb. The common factor is still hidden and promises to remain so until further chemical research opens the door to a more complete understanding of metabolism.

Acetone alone I believe to be an insufficient cause of this condition. Other substances seem to appear progressively with an increase in the severity of the symptoms: first, diacetic acid; then, beta-oxybutyric acid, and it is possible that in the near future other fatty acids will be detected. Be that as it may, acetone should be well regarded as a danger signal and the warning forerunner of a threatening condition much more serious in character.

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Reports of Societies.

WINTER MEETING OF THE NEW ENGLAND BRANCH OF THE AMERICAN UROLOGICAL ASSOCIATION.

BOSTON MEDICAL LIBRARY, FEB. 4, 1908.

PRESIDENT, O. C. SMITH, M.D., Hartford, Conn.; Secretary, R. F. O'NEIL, M.D., Boston.

DEMONSTRATIONS OF SPECIMENS AND REPORTS OF CASES.

SPECIMEN OF A VERY LARGE SARCOMATOUS KIDNEY FROM A CHILD.

DR. F. C. KIDNER: This specimen is one of the many types of sarcoma of the kidney. It was taken from a much emaciated child three years old, and weighed 4½ pounds when first removed. The family being Poles, the past history of the case is almost unknown; but the tumor seems to have been noticed about a year. It was taken out a week before Christmas. The child was sent home three weeks later, and since then has gained in weight and is improving rapidly.

Microscopically it shows an unusual form in that it is less cellular than most of the sarcomas. In parts it shows tissue resembling smooth muscle. In other parts it is typical fibroma. In still other parts it becomes a spindle-cell sarcoma; and in certain limited areas it has the characteristics of a round cell sarcoma. And scattered through the tissue are numerous glands, probably of the same origin as those of the endometrium. These glands are common in the congenital kidney tumors. The specimen has seemed to me very interesting on account of its size, being larger than the adult liver and its varied structure. Nowhere was any true kidney tissue found.

EPIDIDYMECTOMY FOR TUBERCULOSIS.

DR. C. G. CUMSTON: This epididymis was removed for tuberculous epididymitis. It is, both in shape and size, like a small pus tube. The patient, about thirty-seven years of age, had undergone castration on the right side some five years previously so that it was necessary to preserve the remaining left seminal gland if possible. The operation and results were successful. Since hearing Dr. Keyes' paper, some months ago, on epididymectomy for tuberculous infection, I have performed the operation three times with excellent results. In each case, however, I split the testicle, to ascertain if it was perfectly free from the disease, and when found normal it was closed with catgut and the epididymectomy was then proceeded with. I place great stress on the preliminary incision of the seminal gland in order to discover its condition. This procedure has not been referred to by other surgeons, so far as I am aware.

1. UNTOWARD SYMPTOMS DURING THE USE OF THE AIR DISTENTION URETHROSCOPE.

DR. A. L. CHUTE: A case of considerable interest that came under my observation recently was that of a man about forty, who had been operated upon ten years before for a tight stricture. His stricture had recurred and I tried various bougies and filiforms without getting into his bladder. The instrumentation caused a little bleeding. After washing his urethra with silver nitrate solution I introduced an air-dilating endoscope and began to inflate his urethra. He remarked as I began the inflation that it made him feel "queer," but as I supposed he simply felt a little air escaping into his bladder I did not stop but proceeded with the examination. The examination had lasted several minutes when the patient suddenly sat up on the table and said he felt faint. He immediately sank back and became unconscious. He was cyanotic; we could get no pulse; he did not breathe. We did artificial respiration for some time before he began to breathe and his pulse became perceptible. For several hours he was nauseated and had a rapid pulse of poor quality. A day or two later he showed no ill effect from this experience.

I took this to be an instance of mild air embolism. That air under pressure had been forced into the ruptured vessels. Later I learned that he had been taking "dyspepsia tablets," probably containing acetanelid, in considerable numbers; whether or not these played any part in his collapse I cannot say. He had no valvular heart lesion. This case seems to show that it may be dangerous to distend with air under pressure a urethra in which we have caused even a slight abrasion.

2. UNILATERAL RENAL EXCRETION OF CALCIC OXALATE CRYSTALS.

There is another case I wish to refer to briefly. A few days ago I was asked to see a woman who had had an acute pyelitis on her right. Three weeks before her temperature had been 102°, and beside pus in her urine there had been an enlarged tender right kidney. Her history was that of several attacks of like character. I catheterized both ureters simultaneously, and obtained from the right side turbid urine, with clear urine from the left. I cut down upon the right kidney which was considerably enlarged and, after separating very dense perinephritic adhesions, fixed it in a better position. The microscopic examination that I made later showed that the turbidity of the urine from the right kidney was due practically entirely to calcium oxalate crystals. The urine contained only a few cells; no more than one would often get from the traumatism of ureteral catheterization. The urine from the left ureter on the other hand showed a few cells but not a single calcium oxalate crystal.

This case seems to me very interesting as demonstrating that the kidneys may, in their excretion of mineral material, work absolutely independently. I do not remember to have seen references to instances of this sort.

THE END RESULTS OF DIFFERENT METHODS OF TREATMENT OF STRICTURE.

DR. F. S. WATSON: I began the practice of medicine shortly after the time at which there occurred in New York a somewhat stormy discussion upon the subject of the treatment of stricture. The active participants in the discussion were: Otis, Keyes, Sands, Weir and

Gouley. They thrashed the subject out in so thorough a way that they left very little to be said about it and, as a matter of fact, I have heard very little of importance added to it since that time.

There are, in general, two factors which we consider when giving the preference to one or another method of treatment for some special condition. These are its safety as compared with that of other methods, and the character of its results as compared with those obtained by other methods. In the case of stricture of the urethra, another element comes in, viz., the nature of the stricture *per se*.

For example, as we all know, it is useless to attempt to treat resilient strictures by any method except that of urethrotomy. It is also futile to treat the worst examples of extensive and very dense strictures of the deeper parts of the urethra by any method other than resection; whereas, the general run of strictures are fairly amenable to treatment by gradual dilatation.

So far as safety is concerned and so far as the convenience of the patient is concerned, we would all agree that gradual dilatation was the method of choice. We would furthermore be in accord with regard to the following statements: The operative dangers attaching to divulsion and to internal urethrotomy, if the latter is limited in its application to strictures which are not further from the meatus than five inches, and if the operation is performed with proper regard to cleanliness, is very small. The reason for the much higher operative mortality which attends the operation of external perineal urethrotomy is that the operation is done under circumstances which, in themselves, are dangerous, and not to the operation itself, which is one of the most trivial and safest of surgical procedures. The danger accompanying this operation is not the determining of choice of method of treatment, for we are obliged to do external perineal urethrotomy under certain circumstances.

When we come to consider the other factor in the choice of method of treatment, viz., the results which each of the methods yields, their character very clearly indicates to which form of treatment the preference should be given. Gradual dilatation rarely *cures*, in the sense of the term which I mean to imply and which I will explain in a moment. Divulsion results in cure in but a very small proportion of cases and in an important number it produces strictures that are more dense and resistant than those for the relief of which it was done. Expert surgical opinion long since relegated this operation to the class of obsolete procedures, amongst which it properly belongs. Internal urethrotomy is the *only* method of treatment by which an important number of cures can be obtained. The much smaller proportion of cures which follow the performance of external perineal urethrotomy is to be explained in part, presumably, by the fact that the operation is reserved, in many instances, for the more severe forms of the malady, in part because of its being done in the presence of urinary infiltration and in the sequence of trauma and, finally, because the incision in the course of its healing is subjected to the irritation of dressings, etc. The results of resection are not so good as those of internal urethrotomy, in a great majority of the cases; again, because of the nature of the conditions presented. The end results of this procedure are, however, much better than might be expected from the nature of the lesions, and whether or not it is the only way offered by which we can secure a result of even moderate permanence in certain of the cases.

I forgot to mention electrolysis. A good many years ago, this method of treatment was strenuously advocated by one or two partisans. Several members of the American Association of Genito-urinary Surgeons gave it an impartial and full trial. Personally, I applied it in 13 cases. The results were negative in three; in one there appeared to be a temporary gain; in the other nine, a marked increase in both the density and contractility of the constriction occurred.

A moment ago, I said that I should explain what I meant by cure as a result of the treatment of stricture. The sense which I give to it is that the patient does not require to pass instruments through the urethra in order to maintain the full caliber or very nearly the full caliber obtained by the treatment, whatever may have been its nature. As I said before, there is but one method of treatment by which an important number of patients can be cured, in that sense, and that is the method of internal urethrotomy. In my personal experience, 60% of the strictures treated by internal urethrotomy and not located more than five inches from the meatus have been cured. In a few instances, I have had to repeat the operation, having failed on the first occasion to obtain a cure. I have had a much smaller number of the patients upon whom external perineal urethrotomy was done under observation than those upon whom I have performed the internal operation or have treated by gradual dilatation. So far as my observation allows me to judge, but a very small proportion of cures follows the external operation.

I have done resection but four times, and have had no case in which a positive cure resulted, but the results were encouraging in all of them.

I have not succeeded in obtaining more than ten or twelve cures by means of gradual dilatation.

The question that is often asked is, "Why should the incision of an internal urethrotomy operation differ from the cicatrices formed by other incisions with respect to the contractility of the connective tissue which constitutes it?" I do not know why, but the fact remains that a properly made incision of an internal urethrotomy does not produce a cicatrix which causes constriction of the urethra at the point at which it is made. As long ago as 1835, Reyvard proved that longitudinal incisions of the urethra do not result in contraction of its canal. This was experimentally demonstrated by him; it was shown to be true of the human subject also, a good many years later, by Perrin, in the case of a patient upon whom he had performed an internal urethrotomy three years previously. Since that time, a very large number of observations, some of them made clinically with the endoscope and with other instruments, and a smaller number being post-mortem observations, have accumulated to confirm the original ones. The best personal demonstration that I have had has been in the case of two patients who were subjected to internal urethrotomy, twenty-one and twenty-two years previously. In neither of these cases, was there the slightest contraction at the site of the former strictures. In one of the cases, the caliber of the stricture was 18 of the French scale; in the other case, there were two strictures, one of which was 20 and the other 16 of the French scale.

There is one thing that should be understood with regard to the results obtained by internal urethrotomy, viz., that 60% of cures will not result from the operation unless it be performed in the proper way under the proper conditions, and unless the after-treatment is properly carried out. These conditions are as follows: That the stricture is not one of such density and extent as to make all methods of treatment except resection useless. The stricture should not be located posterior to five inches from the meatus. The operation must not be performed in the presence of an acute or subacute urethritis. The meatus must be cut to a size a little larger than that of the normal caliber of the urethra behind it. The strictured part of the canal must be cut to the normal size of the individual's urethra in each case. Sounds of the full size of the urethra must be passed every second day until the wound is closed.

One word with regard to what is meant by the normal size of the urethra. By its normal size, I mean the caliber estimated in accordance with the scale of measurements and the rules set forth by the late Dr. Fessenden Otis, of New York. I should certainly not think it worth while to call attention to these measurements, were it not for the fact that, even at the present time, there appears to be no comprehension of them, except in this country, and also because even here they appear to be in danger of being forgotten.

There is no other consistent or accurate method of establishing the size of the canal than that laid down by Otis. I confirmed personally his measurements many years ago and fully satisfied myself as to their correctness.

One word also with regard to the custom of tying a catheter into the bladder after the operation In the case of external urethrotomy, I place the catheter in the bladder through the perineal incision and keep it there for the first twenty-four or forty-eight hours. In the internal urethrotomy operation, I do not employ it, because of the urethritis which it so commonly produces. It does not prevent contact of the urine with the tissues.

Employed as Reginald Harrison advises, namely, through an external perineal incision for the purpose of diverting the urinary stream from the incision of an internal urethrotomy and in order to avoid the occurrence of constitutional disturbance following the operation, the catheter is, I think, of value, but it is certainly not essential to the object in view, since constitutional disturbance can be averted by the observance of urethral asepsis in almost all cases in which internal urethrotomy is done.

With regard to the method of attacking impermeable strictures of the bulbous portion of the canal, I prefer either to open the posterior part of the membranous urethra just behind the stricture by means of an open dissection of the perineum and to trace the canal through the strictured part, from behind forwards, or else to do so through a suprapubic cystotomy incision. Either one of these is preferable to the thrust of Cock which had a vogue in England at one time, or to the suggestion made by Gibson with regard to hooking the urethra from the rectum by a curved hook and incising it.

In the case of very extensive stricture in its deeper portions which involve the necessity of making long incisions or resecting a part of the canal, I have been content to allow the urethra to heal over a catheter passed through the whole length of the canal into the bladder, in the former instances, and have not found it necessary after resection to unite the ends of the divided canal. The mucous membrane shoots forward from the posterior urethra and backward from its anterior part and makes a new and very serviceable canal if allowed to heal over a catheter.

THE CHOICE OF METHODS IN PERINEAL SECTION.

Dr. Hugh Cabot: Following the distinguished example just set, I have no paper.

I feel obliged to make a few extenuating remarks in regard to the operation of divulsion which has been mentioned; the operation is still done, but not very frequently, and I still cling to the belief that there may be cases in which it is a desirable procedure. I see a certain number of cases in which under anesthesia a sound is passed, and in such cases there is very little difference between a sound used in that way and a divulsor. The only case with which I am familiar, of autopsy after a recent divulsion, was in a patient of the late John Homans. He died from other causes, and the autopsy showed an absolutely perfect cut along the roof of the urethra; there was no reason why that should have done less well than a similar cut made with a urethrotome. It thus appears that with the operation of divulsion the urethra may crack or break in a very regular way, so that it does not necessarily follow that in the operation the urethra is mauled. However, I have not myself regarded it as a good operation.

In regard to the choice of methods for dealing with stricture of the deep urethra, I have no experience with internal urethrotomy in strictures of the deep urethra; I think it has been largely abandoned.

All the operations which I shall discuss are types of external urethrotomy, which come under the general heading of perineal section. They have a double object: First, the relief of back pressure and, second, the permanent improvement of the local condition. If there is any choice between operations it is as regards their end results.

I take it that the most common operation is the classical median perineal section either for an impassable stricture or for one that will admit only a small instrument. The median operation divides the stricture, finds with ease or with difficulty the internal orifice, dilates the deep portion of the canal with a sound or the finger, a method not essentially different from divulsion: in fact, it is described by Keyes as divulsion, and puts in a perineal tube or catheter. In this operation (and it is the one most commonly done) no attempt is made to improve the local condition. As we see these cases afterward, they are not materially benefited, unless they have been very closely watched. But a great majority of hospital cases neglect themselves. They will not come back for the passage of sounds. They wait until their urethræ recontract, and then they come back and are operated upon again, and this is repeated two to four times and each time with an increase in the amount of scar tissue. The already existing scar tissue, instead of being diminished, is rather increased. The operation, especially if the wound becomes at all infected, adds scar tissue; and despite the rule that median longitudinal incisions are not usually followed by contraction, I think that these are generally followed by contraction. As I have seen them it seems to me very doubtful whether this typical median perineal section permanently improves the condition.

Perhaps the operation second in frequency is the median perineal section accompanied by removal of the scar tissue. This operation is described in all the modern books. It is noticed at some length by Young. It is an attempt to remove the palpable scar tissue around the urethra, and is perhaps most applicable to short narrow strictures. If applied to the cases where there is a half inch or more of dense scar tissue in the perineal bulbar portions of the urethra, the operation results in a more or less moth-eaten condition of the parts. When you have gotten through there is considerable doubt as to what is urethra and what is periurethral tissue. The amount of normal mucous membrane left behind is small, and the operation is certain to be followed by a considerable amount of scar tissue, so that, except in selected cases, it seems to me of very doubtful value. Young, however, notices it very favorably. He has followed his cases and is satisfied that they show better results than the cases of median perineal section. But I doubt whether it absolutely diminishes the amount of scar tissue.

An operation much less often done, but having some merit, is the operation of resection. It is the operation of choice for traumatic stricture. These are typically short strictures with a great deal of scar tissue. For inflammatory strictures it has been performed for a long time but never in great numbers of cases, and it has never been very satisfactory. It has seemed to me, however, that it is an operation deserving more attention than is paid to it. I think the reason why it is no more used is the fear that it will be difficult after resection to get the ends of the urethra together without tension, which of course is essential to success. Unless the ends of the urethra can be made to practically lie in contact, they will surely draw apart, and a long ring of scar tissue will result. I myself have not dreaded to undertake it even in long strictures since a case which came under my observation not long ago. This was the case of a boy who came into the hospital eighteen months ago with a fracture of the pelvis with displacement downward of the ascending ramus of the pubes so that the membranous urethra was completely severed. When he first came in Dr. Brewster was unable to find the posterior end of the urethra. He opened behind the prostate, put in a catheter and the boy went home after recovery. Eight months later he returned with complete obstruction. An instrument passed into the anterior urethra came up against the front of the fragment of the pubis. His bladder was then opened above the pubis, and the finger passed into the prostatic urethra went into a blind pocket. A granulating area was found in the bladder wall behind the prostate through which a sinus went into the perineum. The bladder was now drained above the pubes. Ten days later the bladder was opened again. The anterior urethra was found lying up in front of the pubes and ending in a blind pouch. The membranous urethra was practically gone and ended at the apex of the prostate behind the pubic bone. There was about two and one-half inches to be made up there by something. The dissection was carried backward and the prostate freed. The anterior urethra was then immobilized to above the peno-scrotal angle. The ends then came together without tension and without any considerable deformity.

If such a space as that can be as readily filled in, it seems to me we need not be afraid of resecting an inch or more of the bulbar portion of the urethra for stricture. Since that time I have had several cases in which I have done this and have been very favorably impressed with the results. The ends come together easily and the wound is practically closed at once. I have never left the wounds open. At the end of a week a sound goes through the stricture with perfect ease, so much more easily than through the cases of median perineal section, that I am inclined to regard it as the less risky operation of the two.

Furthermore it seems to me quite possible actually to enlarge the caliber of the urethra by this operation by cutting the ends on a bias and bringing them together in a more favorable manner. This can easily be done if the anterior urethra is sufficiently mobilized and the caliber made sufficiently large.

The only other method in at all common use is the rather recent method of the French school, of fistulization, that is, opening the urethra behind the stricture and leaving it wide open. Where a considerable amount of mucous membrane remains, it is stitched to the skin. This fistula is allowed to remain for eight months to a year and a half, during which time the inflammatory tissue is absorbed, and the fistula is then closed. The reported results are sufficiently good to make it seem well worth trying. I have some doubt whether the average American patient would look with favor upon a perineal opening existing for that length of time; and I am not sure that that is not going to be the difficulty in this country. Our patients are rather fussy about having things in an apparently normal condition. On the other hand, it is undoubtedly true that by giving the tissue in that region sufficient time to rest a considerable amount of absorption will take place, and in very intractable cases it has distinctly attractive possibilities.

A word or two about the technic. The straight median perineal incision has very considerable disadvantages, especially for impassable strictures. It frequently leaves us in the box so vividly described in the textbooks where, after an unsuccessful search for the posterior opening, it is found necessary to open the bladder from above. This difficulty almost directly results from the nature of the incision. Everything is in a vertical line, and if you get to the one side or the other, or cut through the roof of the urethra, you are lost.

I have found very useful the operation, using the curved transverse incision. This is not new, but it seems to me that it gives very distinct advantages. If necessary, the whole deep urethra is exposed. In reviewing Dr. Young's article in which he describes his technic, I said that I thought it might be difficult to find the urethra behind the stricture and get much help in that way. But further experience has convinced me that I was wrong. This method was of great value to me in three recent cases in which I was unable to find the opening without the aid of a tranverse incision. In this way the membranous urethra was readily found and the stricture divided; the much freer incision of the perineum I found helpful. I have been more or less cramped by the old median incision which does not give much view aside from the stricture itself. The transverse incision helps in finding the apex of the prostate where the urethra is certain to be found; then there is no serious difficulty in finding the posterior face of the stricture.

I do not expect in the future to have to do the suprapubic operation for these cases. It is difficult to see how with a free incision it would be impossible to find the deep portion of the urethra.

There are some cases to which anything but the simple division of the stricture is inapplicable, especially in those in which there has been recent inflammation. Many of the cases have been stirred up so that the anterior urethra is seriously damaged, and the conditions are very unfavorable for resection. In these cases the urethra may be opened at or behind the stricture and the bladder drained, and later a resection may be done.

Dr. J. B. Blake: Immediate suture of the urethra may be attempted in cases of external nethrotomy in which a stricture of moderate extent and density has been incised by a careful, accurate cut. In such cases a large-sized rubber catheter is to be brought through the entire length of the urethra, and the suture of the perineal incision may be made in two layers with fine catgut, or in a single layer, also of catgut. The edges of the cut urethra itself cannot as a rule be approximated; but the muscle fibers and the peri-urethral tissues may be taken as a deep layer, and the skin as a second layer. The sutures should be interrupted; the catheter should be removed after thirty-six to forty-eight hours, and a sound passed carefully on the fifth to the seventh day. Sterile dressings should be changed frequently and the urethra irrigated gently twice a day after the removal of the catheter. In such cases we may hope for favorable results; that is, practically, first intention healing, with very little or no leaking of urine from the first, in 20% to 50% of the cases.

I should like to ask Dr. Watson about the cause of death of the man who died after the passing of a sound.

Dr. Watson: In answer to a question by Dr. Blake about death following the passage of a sound;

That was one of those cases in which we must attribute death to the so-called urethral shock and not to sepsis. Death, in this instance, took place within four hours after the instrument had been used. The patient felt faint immediately upon the withdrawal of the sound and almost at once, afterward, he had a severe chill. Chills and periods of fainting succeeded each other throughout the next hours until he died. It resembled in its manifestations the sudden and unlooked-for accidents, such as that which was mentioned by Dr. Chute in the case in which he attributed the symptoms to air embolism; here, however, they were called forth by the peripheral nerve impulse created by the contact of the instrument with the urethra, and I do not think we can regard this as having been a case in which sepsis played any rôle at all.

Question. Was the urethra irrigated?

Dr. Watson: No, I think not.

In the early days of my practice I did not employ urethral irrigation and, as a consequence, chill succeeded by more or less fever usually occurred but was not of serious import, as will be seen by the fact that the operative mortality attending the performance of internal urethrotomy was less than 1% and no death has occurred in my private practice. It is interesting to recall the fact that has been so often observed, namely, that the deaths that have occurred in connection with the use of urethral instruments have not been in those instances in which extensive trauma has been inflicted but have conspicuously happened in those in which there has been little if any injury.

Dr. Alfred Mitchell, Jr., of Portland, Me.: Mr. President and Gentlemen, I have been very much instructed by the papers of the evening. I feel that there is very little for me to say.

In regard to gradual dilatation of the urethra, I believe that is the method of choice in the large majority of strictures. And I have been much surprised in reading the works on the subject to find the methods used for gradual dilatation. Nearly all the textbooks will describe very fully the use of the whalebone filiform and tunnelled sound, and have little to say regarding the filiforms and followers of the French pattern. But it seems to me that the French filiform has a tremendous advantage over the whalebone; and if it were more generally employed, the necessity for urethrotomy would be less. I have frequently seen cases where the whalebone form has been employed without results, in which the French filiform and followers were perfectly successful. In fact, I have repeatedly observed cases in which previous dilatations had been accomplished with much difficulty by the whalebone pattern, — neglected strictures, where the patients expressed great surprise at the ease with which the operation was performed by means of the filiform and followers. For these reasons I feel that if the use of the French instrument was more general, urethrotomy would be done much less frequently.

In regard to Dr. Cabot's paper on the choice of methods, I have nothing to add. I think the procedures he recommends are certainly to be followed.

Dr. C. G. Cumston: I fully agree with the view expressed by Dr. Watson that the results obtained in urethral operations are due largely to the proper handling of the case. The operation of internal urethrotomy is one that requires very good technic; and in this operation the choice of instruments is an important one. I have used a number of urethrotomes and it seems to me that the most satisfactory one is the old Civiale. The only trouble with it has been a defect in the construction. Those manufactured up to a few years ago were made with the bulb, which hides the blade, too large to pass by a small stricture. But now there has been a modification whereby the blade is narrower than in the original instrument, and the bulb correspondingly reduced in size so that it will pass through a very small opening.

I have been a user of the Civiale instrument, and have never found another instrument to take its place, with one exception. That is the Maisonneuve. It is the instrument of choice when you have a stricture closed so tightly as not to admit even the newer type of Civiale. It has the advantage that you can use a filiform bougie with it as a conductor. It is a good instrument for this purpose, but it is dangerous, for it is likely to cut too deeply. It has three sizes of blades. I have always used the number two, which is the medium size. The smallest blade is too small to make a complete section and the largest blade is dangerous as it cuts too deeply.

I wish the gentlemen in their further remarks would give a little detail as to their technic used in internal urethrotomy.

Dr. C. M. Whitney: Regarding sudden deaths following gradual dilatation of the urethra, I have one case to report, which came under my observation eight or ten years ago. It was that of a young man whom I had previously treated for chronic urethritis. At this time his urethritis was cured, but he had left a spasmodic stricture. He came in one afternoon, and I passed a sound just as I had done many times before, using, as I thought, no violence whatever. He returned home and that night had a chill. His family physician telephoned to me next morning and I recommended the usual procedures. He died twenty-three hours after passing the sound.

I was fortunate in having an autopsy in this case. The cause of death was found to be acute septicemia. The autopsy was done by Dr. McGrath, because the man had some financial trouble and his sudden death gave rise to suspicion of suicide. In the urethra there was a small slit through which the end of the sound had passed into the mucous membrane.

This case illustrated to me how easily the urethra may be injured. I have no knowledge of any difficulty whatever in passing that sound. Its withdrawal was not followed by blood. I did not use silver nitrate, but at that time used permanganate of potash for irrigating, which in my estimation is entirely useless.

I wish to say a few words in reference to the gradual dilatation of strictures; and that is that there are many cases where the operative means will not be permitted. And the cases which I especially wish to speak of are the strictures of a caliber of nine, ten, or eleven French in the deep urethra. They are surrounded by cicatricial tissue, often having false passages made by instruments, and you can dilate with a bougie to number ten or eleven, and then cannot get any further. In these cases the French bougie followed by a sound seems to me to be a very valuable instrument. I have been using it in the past year and have had a number of cases which failed to yield to other means of treatment, in which operative means were out of the question; and I found it very easy to dilate in this way up from ten to twenty or twenty-five, which is as high as we should expect these strictures to be dilated.

I claim no originality in this, but wish to make a preliminary report on what I propose to do. The idea is this, to have a flexible bougie as a guide, which is very much better than the whalebone bougie. In my experience the whalebone is very inelastic and passes through a tortuous stricture with difficulty. The best size of leader, it seems to me, is about a number three or four French. On this instrument can be attached by a screw thread with perfect ease an ordinary sound of smaller caliber than is safe to use without it. This will follow perfectly the track of the guide.

I have had great difficulty in getting these instruments made. The ideal way is to have a uniform size of bougie; and after inserting it through a tight stricture you can then attach possibly a number ten sound which passes with great readiness; you may then remove the sound and screw on another size and thereby dilate without losing the passage through the stricture.

I have not all sizes at present because these French bougies are made on very different gauges. I am using here, as you see, two sizes for different sounds. Porges is making a uniform guage at my suggestion.

In retention following strictures in which we cannot dilate to admit the catheter, the only thing we can do now is to insert a bougie and put the patient into a bath and wait for it to dilate. In such case it would be a great advantage to have a catheter of a size about number twelve to be used with this attachment. Then if we can get through at all with the bougie, we can follow with the catheter and relieve the retention of urine.

In external urethrotomy it is of distinct advantage to have a guide in the urethra, and I propose to have a grooved sound for this purpose, attached to the leader in the same manner. Thus, when the set is completed I shall have to attach by a uniform screw thread to the leader four sizes of sounds, ten, twelve, fourteen and sixteen, a catheter and grooved sound. The F. H. Thomas Co., have aided me greatly in working this problem out, but it is not finished yet.

This is, as I said, a preliminary report and I shall value the criticism of the members of this society.

Dr. A. L. Chute: There are two or three points in connection with the subject under discussion on which I would like to say a word.

First: In regard to internal urethrotomy in the deep urethra. Dr. Cabot spoke of that operation as having been largely abandoned. I think that statement needs a slight qualification, and we should put it, " largely abandoned in this locality." Unless there has been a change it has a considerable following in England.

In many cases it has seemed to me an extremely satisfactory operation when carried out with the Maisonneuve instrument. I have done it a number of times with good results. I think the fear of hemorrhage deters some from the Maisonneuve operation. If the instrument is held strongly depressed while cutting the stricture one is likely to strike the deep veins under the arch of the pubes and get free and sometimes severe hemorrhage. If on the other hand the instrument is held high during cutting I have never seen troublesome hemorrhage. I cut the stricture to 22, which makes a good start, and determines the line of cleavage, so to speak. I then dilate with sounds up to the size of the meatus and place a retention catheter in the bladder.

The operation of removing a part of the stricture by dissection, the operation advocated by Hartmann, I have done once with a poor result. The patient had a tight fibrous stricture of long standing that had been operated upon twice before by divulsion. I dissected out the fibrous tissue on the floor of the urethra, then covered in a catheter with a layer made of subcutaneous tissue and covered that in turn with a second layer made of the skin. A short time after operation, contraction began to take place and this man now has long fibrous stricture. A few weeks ago it was several sizes less than four years ago and this in spite of the fact that I have passed sounds at frequent intervals.

Perineal urethrostomy, Poncet's operation, I have done once, intending it at the time as a temporary procedure. The patient had fistulæ following a urinary infiltration that resulted from the divulsion of a stricture. Originally he had eight fistulæ, but some of them I had been able to close. Three stubborn fistulæ remained from which there was considerable suppuration as well as leakage of urine during micturition. I did a perineal section, brought the bladder end of the urethra out and caught it to the skin, making a perineal meatus. This cleared up his suppuration, prevented him wetting himself during micturition and was in practically all respects a great advantage. This patient lived something more than a year after operation and was very comfortable during that time. His only inconvenience was that he had to sit down to pass urine. There was no tendency for the opening to contract. As the membranous urethra was not interfered with, the patient had perfect control. I believe that under rather exceptional conditions this operation is of great value.

Dr. F. J. Cotton: Gentlemen, I am very sorry that I could not be here in time to hear the papers this evening, but I was unavoidably detained.

All I know about strictures can be said in a very few words, and so I have but little to say at this time. And I suspect that part of what I say in regard to treatment of strictures is heresy. In regard to operation or gradual dilatation for stricture: Personally I am apt to operate; that is a defect of temper of mine. But the more I see of these cases the more the conviction grows on me that the good results of treatment of permeable strictures come in those cases in which the surgeon is not allowed to operate by the patient, and has had to dilate. So that the more experience I have with them the more I feel that in a great many of them operation is not the best thing we can do for them, not if we can proceed in the other way; and that the good permanent results are likely to come not from operation but from patient dilatation.

In regard to the operation: The choice of instruments it seems to me is not of very great importance. Either the Otis or the Maisonneuve will do, depending on the familiarity which the surgeon has with the one or the other. As to the operation, in cases where you cannot get in a guide, the only thing to do is to get in. For example, if you decide to operate after using the suprapubic tapping, you are going to operate and you have got to get in. If you can get in by the time-honored way of finding the urethra, so much the better. Skill in this technic is a personal matter which has to be acquired by the individual, and is not a matter that can be transmitted from one man to another. In case one cannot find the urethra in this way, and further search may be a question of taking too long at the operation, then it seems to me there are other things to do, and I plead guilty to having done one of them in several instances; that is, after going in and cutting down on the urethra, if you cannot do better, go in with the sound and plunge for the apex of the bladder, not with the knife, but with the sound.

There is another operation which many of us have done, but which has been published only recently; that is, the operation by going behind the stricture by cutting another working forward. The other way of getting out of the difficulty is by a retrograde operation. I have been forced to that operation once, and it is much better than fooling for several hours with external urethrotomy without a guide.

As to the after-treatment: I leave the catheter in the urethra as long as possible on the basis of forming a scaffolding for the formation of new tissue. It will grow better if you give it shape for the granulations; so that it is well to leave the catheter in place as long as the patient will stand it.

Sounds: Pass them yourself and do not leave it to the house surgeon to do. Beyond that I can say nothing of the after-treatment.

(To be continued.)

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THEODORE TRONCHIN.

In our issue of last week we published an admirable sketch by Dr. Frederick C. Shattuck, which was read before the Association of American Physicians this year, of a little-known medical hero. We are tempted to call special attention to this paper, not only because of our evident neglect of the historical side of our profession, but also because it is peculiarly interesting to observe the conditions under which progress takes place. In fact, it is certainly a check to the arrogance which occasionally takes possession of us to realize that very much that we are now teaching as new is a century or more old, and that to reach our present state of knowledge we have passed through an incalculable amount of error. These facts Dr. Shattuck brings out on the basis of a critical discussion of the life and work of Tronchin, a little-known practitioner in our day, of the earlier part of the eighteenth century. For the details of his remarkable career, we beg to refer our readers to the original paper. We wish here merely to call attention to the really extraordinary attitude he held toward matters which it has taken nearly two centuries to relearn. For example, he did not believe in the drastic drug administration of the time, in bleeding as then carried out, or in the contravention of natural processes which apparently then played so significant a rôle in the healing art. He insisted upon proper hygiene, advised exercise, condemned the tendency to exclude fresh air, was wise beyond his day in methods of rearing children, and was a pioneer in the introduction of inoculation for smallpox. It may well be imagined that his life was not an easy one, living as he did amidst the prejudices and jealousies of the time, perhaps most strongly manifested among his fellow practitioners. He appears, however, to have been a philosopher in spirit, and to have taken his rebuffs without undue solicitude. Certainly the rehearsal of the life history of such a man as this is most salutary at this time, when we are too apt to be carried away with the advances in medical science to the exclusion of a saner appreciation of the attributes of the medical practitioner for whom the saving grace of common sense is as essential now as at any time in the world's history. We cannot forbear to quote the closing sentences of Dr. Shattuck's paper, in which he sums up the significance of Tronchin's work:

> "His life was consistent throughout. He was one of the greatest practitioners of medicine the world has seen. This may be a strong statement, but I believe it to be true. We can all profit by his example, thanking God that we live at a time when all true physicians are humble followers and students of nature, when the impassioned advocates of theory and hypothesis have gone to their long rest and when Medicine is coming to her Kingdom."

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BOSTON FLOATING HOSPITAL.

A charity which particularly appeals to the humanitarian during the summer months is the Floating Hospital, a type of institution which for a number of years has been in successful operation in New York as in this and other cities. It is not to be questioned that the amount of suffering among the poor is very much greater during the heat of summer than in even the severest cold of winter. This suffering naturally falls in greatest measure upon young children and babies. A day or several days away from the conditions which tenement house life entails is naturally a boon much to be appreciated by parents, and no doubt is often sufficient to save life. The readiness with which public spirited citizens respond to requests for the furtherance of this charity bears witness to the widespread feeling of its usefulness.

The Boston Floating Hospital, after some years of vicissitude and under inadequate equipment, has finally obtained a satisfactory boat with which it can undoubtedly accomplish much more than under the adverse conditions with which it has been previously obliged to contend. On the opening day of the summer work, which occurred last week, more patients appeared on the wharf than in any previous summer, which attests the reputation which the hospital has attained among the poor of the city. On the initial trip about seventy-five children, after preliminary examination, were received as patients, some for the day only and others for the permanent wards. Although the *personnel* of the staff has changed in some details, it is in many respects the same as in previous years, and includes the names of many well-known physicians. We note one conspicuous change in that Dr. Robert W. Hastings, long the resident physician on board the boat, is not serving this year, his place being taken by Dr. John Warren Bail. Considerable simplification of the work this summer is expected through the employment as orderly of a Hebrew who speaks many languages, including Yiddish and other dialects which are the sole means of expression of a goodly number of those seeking the services of the hospital.

It is hardly to be questioned that this excellent charity will be supported with the same enthusiasm this year as heretofore. If the present extreme heat is a forerunner of more to come, the Floating Hospital should prove an even greater boon than in previous years.

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AN OUTDOOR CAMP FOR TUBERCULOUS CHILDREN.

On July 2 a camp for children predisposed to tuberculosis was opened in Brookline, Mass., said to be the first of its sort in this country. After some difficulty a site was chosen 200 ft. above the sea level, to which children may be sent for the day. This site was agreed upon by the Brookline Anti-tuberculosis Society, the Brookline Friendly Society and the Board of Health. The object of this camp is not unlike that which has for several years been maintained for adult tuberculous persons and which has hitherto proved a success. The patients are conveyed in the morning to the place provided for them on the grounds of the contagious hospital and are returned to their homes late in the afternoon. A nurse of experience spends the day with the children, keeps them out of doors and, in general, provides for the kind of entertainment, amusement and exercise desirable for the children of that type. Although the plans have not as yet been completely worked out, the general design of the undertaking is to provide still another means of prophylaxis. To this end each child will receive individual attention and his daily activity regulated to meet the individual need. The children are either suffering from the disease in its incipient form, or are predisposed to the disease through having tuberculous parents, or through living in crowded and unhygienic parts of the city. Naturally, as in all efforts of this sort, it is hoped that not only may the patients be educated in measures for withstanding the disease, but also that they may themselves serve as object lessons in the communities in which they may chance to live. The amusement and entertainment of the patients, of whom it is hoped twenty may be cared for, will naturally demand many resources. It is, therefore, suggested that those who have such things to dispose of would be doing a service by sending books, toys and games to the camp.

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NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

We have before us a volume of contributions to the Science of Medicine and Surgery by the faculty of the New York Post-Graduate Medical School and Hospital, in celebration of the twenty-fifth anniversary of its founding. This anniversary occurred last year and is very properly commemorated by this admirable collection of papers from a large number of contributors. The publication of this volume is of the more interest since it also commemorates the services of the founder of the school, Dr. D. B. St. John Roosa, which occurred in March of this year. Dr. Roosa was the founder of the Post-Graduate Medical School, and up to the time of his death its only president. Dr. Charles L. Dana, who writes his obituary notice, states that the present collection of papers was to be a testimonial by his pupils to his work in education and to the medical sciences. Unfortunately, he did not live to receive this testimonial in person, but its appearance at this time is none the less significant on that account. In the notice of his life, Dr. Dana draws attention to his skill as a practitioner, to his leadership in the departments of otology and ophthalmology, and to his success as a teacher and as a promoter of medical education. The papers published in the body of the volume are concerned with widely diverse medical subjects and are altogether worthy of the purpose for which they were written. This volume will undoubtedly take its place with the constantly increasing number of similar efforts as a memorial of work already accomplished and as an indication of the possibility of further development in the future.

MEDICAL NOTES.

Plague at Port of Spain. — Plague has appeared at the Port of Spain. A number of the cases so far reported have recovered and several have died. Plague is said to be decreasing at Guayaquil. In June there were fourteen new cases, with eight deaths. On July 1 there were still eighteen cases in the lazaretto.

Deaths from Injuries on July Fourth. — According to the Chicago *Tribune*, the statistics so far as ascertainable show that the second day totals of the Fourth of July accidents in the United States numbered 72 dead and upwards of 2,700 injured, a larger record of deaths than for any year since 1899. The number of injured, however, is very considerably less than the average for the last five years. The fire loss of more than half a million is above the average of the last ten years.

A Schooner for Dr. Wilfred Grenfell. — On the occasion of a lecture in New Haven last winter, Dr. Grenfell mentioned the fact that he would be obliged to find a crew to navigate his new schooner *Pomiuk* to Labrador this summer. The problem was quickly solved by five students who volunteered, with a sailing master, to take the boat to him this summer. The voyage was begun a few days ago. The vessel is solidly built to withstand the hard weather of the North; she is slightly over thirty-six feet in length, with a beam of ten feet, and in addition to her sail, power is provided with a gasolene engine. The schooner will, no doubt, be used in the mission and medical work with which Dr. Grenfell is closely identified.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, July 7, 1908, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 44, scarlatina 20, typhoid fever 7, measles 112, smallpox 0, tuberculosis 46, cerebrospinal meningitis 0.

The death-rate of the reported deaths for the week ending July 7, 1908, was 17.95.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, July 4, 1908, was 196, against 160 the corresponding week of last year, showing an increase of 36 deaths and making the death-rate for the week 16.52. Of this number 112 were males and 84 were females; 189 were white and 7 colored; 115 were born in the United States, 66 in foreign countries and 15 unknown; 38 were of American parentage, 118 of foreign parentage and 40 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 45 cases and 4 deaths; scarlatina, 21 cases and 3 deaths; typhoid fever, 13 cases and 3 deaths; measles, 154 cases and 5 deaths; tuberculosis, 35 cases and 25 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 19, whooping cough 3, heart disease 25, bronchitis 2 and marasmus 6. There were 19 deaths from violent causes. The number of children who died under one year was 36; the number under five years 56. The number of persons who died over sixty years of age was 44. The deaths in public institutions were 93.

Cerebrospinal meningitis: 4 cases reported, 1 death.

A Building for the Brockton, Mass., Day Nursery. — Ex-Gov. W. L. Douglas has announced his intention of building and equipping a building for the use of the Brockton Day Nursery. He has furthermore agreed to endow it with a fund of $10,000.

Haynes Memorial Hospital. — It is expected that the Haynes Memorial Hospital, a branch of the Massachusetts Homeopathic Hospital, situated on Corey Hill, Boston, will be ready for patients by the first of August. This hospital is the result of a bequest of $175,000 by the late John C. Haynes, and is to be devoted to the care of contagious affections.

Bequests. — By the will of the late James D. Wright, of Worcester, $10,000 is left to the Worcester Memorial Home for the Blind and for the Temporary Home and Day Nursery. One third of the residue of the estate is left to the Worcester Memorial Hospital. The amount is, however, not yet known.

Through the will of the late Fr. John S. Cullen, of Watertown, Mass., St. Elizabeth's Hospital, Boston, receives $300 and the Home for Destitute Catholic Children and the Little Sisters of the Poor each $500.

Through the will of Mrs. Maria Elizabeth Jones, of Dedham, Mass., the following institutions, among others, are beneficiaries: The Free Hospital for Women, Brookline, the Industrial School for Crippled and Deformed Children and the Kindergarten for the Blind, each, $10,000; the Home for Aged Couples, $5,000.

NEW YORK.

Precautions against Injuries. — With a view to cutting down the Independence Day death-rate, more extensive precautions were taken by the Health Department this year than ever before. An abundant supply of tetanus antitoxin was kept on hand at all of its borough offices, and all the larger hospitals were also supplied with antitoxin, while a special corps of inspectors was on duty day and night to respond to requests for injections of the serum.

Mortality Statistics. — The first six months of the present year were the healthiest in the city since the corresponding six months of 1898; 38,722 deaths were recorded, giving an annual death-rate of 17.46, as against 40.328 deaths and a death-rate of 18.82 during the first six months of last year. The reduction in the mortality among children under five years of age is especially noticeable. The births reported in the six months were 63,815, an increase of 6,220 over the first six months of 1907.

Bequests of the Late William Barr. — By the will of the late William Barr, of Orange, N. J., for many years a leading merchant in the city of St. Louis, $100,000 is left to the manual training department of the Washington University of St. Louis, $5,000 to the Orange Memorial Hospital, $5,000 to the Record ambulance service in connection with the latter hospital, and a number of other bequests of $5,000 and $10,000 to various hospitals and charitable institutions in St. Louis.

Low Death-Rate in June. — The month of June eclipsed all records in its low death-rate in the city. In the week ending June 6 the death-rate was 14.41, the lowest recorded up to that time in the vital statistics of the Health Department. It is stated at the department that the two weeks approaching nearest this low record were the week ending Oct. 29, 1904, when the death-rate was 14.46, and that ending Nov. 11, 1905, when it was 14.61. Yet in the week following, that ending June 13, the rate was even 3 points lower, 14.38, and in the week after that, the one ending June 20, nearly 100 points lower, 13.45. In this latter week the corrected death-rate, excluding non-residents and infants under one week old, was only 12.52. In the week ending June 27 the hot weather increased the mortality somewhat, and brought the rate up to 15.70. The death-rate for the month in general was 14.48, as against 16.44 in May and 16.96 in June, 1907. The corrected death-rate was 13.57. Among the diseases in which there was a diminished fatality were the following: The weekly average of deaths from measles declined from 37.25 in May to 18.75 in June; the weekly average from scarlet fever, from 44.75 to 26.75; from diphtheria and croup, from 34.25 to 30; from influenza, from 4 to 1.25; from epidemic cerebrospinal meningitis, from 8.75 to 4.5; from pulmonary tuberculosis, from 177.5 to 163; from acute bronchitis, from 12.25 to 11; from pneumonia, from 105.25 to 52.25; from bronchopneumonia, from 110.25 to 66.5; from cancer, from 62.5 to 58.75; from apoplexy, congestion, and softening of the brain, from 47 to 36.5; from organic heart diseases, from 147.75 to 107.75; from Bright's disease and acute nephritis, from 104 to 77; and from cirrhosis of the liver, from 18.25 to 17. Among the few diseases in which there was an augmented mortality were the diarrheal affections, in which the weekly average of deaths increased from 56 to 96. The diarrheals under five years of age increased from 51.75 to 89.75. In the week ending June 27 but two deaths were reported from epidemic cerebrospinal meningitis, the lowest mortality from this disease for at least three years.

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Current Literature.

Medical Record.

May 23, 1908.

1. *Graves, W. W. *A Clinical Study of a Case of Brain Tumor; Operation; Complete Recovery.*
2. *Elsberg, C. A. *Pneumothorax and Posture; the Importance of the Abdominal Posture in Operations on the Pleura and on the Lungs.*
3. Abbott, E. G. *A Report of Thirty-one Cases of Congenital Dislocation of the Hip-Joint Reduced by Manipulation.*
4. Fischer, C. S. *Sources of Error in Gastric Diagnoses.*
5. Pilcher, P. *Prevention and Treatment of Cystitis.*

1. Graves reports a case of brain tumor in which operation was completely successful. The patient has regained all her faculties and at the end of a year is perfectly well. The case is reported in full with a minute differential diagnosis. The tumor proved to be a subdural cyst.

2. Elsberg reports on some experiments with dogs on the prevention of untoward symptoms from pneumothorax after opening the pleural cavity. He finds that by placing the dog on the belly, instead of on the back, pneumothorax is much better borne. He discusses his theory to account for this, and states that he has operated on a number of patients where opening of the pleura was necessary, in this position, and that unusually few untoward symptoms have occurred. [W. B. R.]

New York Medical Journal.

May 30, 1908.

1. Konkle, W. B. *The Management of Self-Limited Disease.*

2. Van Slyke, L. L. *Conditions Affecting the Proportions of Fat and Protein in Cow's Milk.*
3. *Fuller, E. *Gonorrheal Rheumatism Cured by Seminal Vesiculotomy.*
4. Huber, J. B. *The Kidney in Acute Infections.*
5. Silkworth, W. D. *Notes of the Jungle Plant (Combretum Sundiacum).*
6. Marple, W. B. *Extraction of Cataract in the Capsule.*
7. Tracy, S. E. *Report of a Case Operated on for Advanced Ectopic Gestation Associated with Fibromyomata Uteri.*
8. Squier, J. B. *The Bladder in Tabes.*

3. Fuller gives the summary of his experience with seminal vesiculotomy for the relief of gonorrheal rheumatism. All of the twenty-three patients operated on left the hospital well or greatly improved. Only six have had any recurrence. In all, he has done this operation one hundred and one times without a death [R. I. L.]

The Journal of the American Medical Association.

May 30, 1908.

1. *Elliott, A. R. *Incomplete Myxedema (Hypothyroidea).*
2. Collins, J., and Romeiser, T. H. *An Analysis of Five Hundred Cases of Spinal Infantile Paralysis.*
3. Diller, T., and Wright, G. *Spondylitis Deformans: with Clinical Reports of Five Cases.*
4. Lathrop, J. C. *A Visit to Stirling Asylum.*
5. Francine, A. P. *How a Great State Is Handling the Tuberculosis Problem.*
6. Anderson, C. L. G. *The White Man in the Tropics.*
7. Ballenger, E. G. *The Use of Gonococcic Vaccine in Twenty-six Patients.*
8. Force, J. N. *Beri-beri without a Definite Rice Factor.*
9. Eshner, A. A. *Hypernephroma of the Kidney.*

1. Elliott calls attention to a group of cases characterized by the morbid hypofunction of the thyroid gland, or incomplete myxedema. These cases differ from myxedema, not in kind, but merely in degree. The diagnosis is naturally difficult and is generally made only when the symptoms disappear under thyroid feeding. The author cites two illustrative cases. [R. I. L.]

The Lancet.

May 23, 1908.

1. *Bennett, W. H. *Lecture on the Use of the X-Rays in the Diagnosis of Appendicitis and Some Other Abdominal Conditions.*
2. *Bonney, V. *Hunterian Lecture on the Connective Tissue in Carcinoma and in Certain Inflammatory States that Precede Its Onset.*
3. Koplic, H. *Prophylaxis in the Care of Children in Hospitals.*
4. Tucker, E. F. G. *Malarial Cirrhosis of the Liver.*
5. West, S. *The Acute Suffocative Catarrh of Loennec and Other Conditions from Which It should be Distinguished.*
6. Curtis, H. *Brief Notes of Interesting Cases of Cranial Surgery.*
7. Clarke, E. *A Method of Suturing the Lateral Recti to Insure Greater Mobility of the Stump after Enucleation of the Eyeball.*

1. Bennett, in an article illustrated with various x-ray plates, emphasizes the need of making a careful x-ray examination in cases of abdominal pain or discomfort unless the diagnosis is obvious. He believes that when an exploratory operation is contemplated, the practitioner who does not in such a case employ the x-rays when they are available, unless the delay involved is detrimental to the patient's safety, is not doing his duty to the patient. His cases are instances in which there was apparently appendicitis, but which x-ray examination showed to be stones in the ureter, tuberculosis of the ureter, or tuberculous glands.

2. Bonney, in the second of the Hunterian lectures on the connective tissue in carcinoma and its relation to inflammatory states that precede its onset, takes up various forms of carcinoma, including carcinoma of the vulva, tongue, lip, cervix, skin, and x-ray carcinoma. The paper is illustrated by numerous plates. [J. B. H.]

British Medical Journal.

May 23, 1908.

1. Cash, J. T. *An Experimental Inquiry into the Relationship of Action to Dose, Especially with Reference to Repeated Administration of Indaconitine.*
2. *Smith, E. *Remarks on the Internal Use of the Oil of Turpentine.*
3. McCarthy, J. M. *Address on Puerperal Eclampsia, with Special Reference to Its Treatment with Nitro-Glycerine.*
4. Atthill, L. *On the Causes of Inversion of the Uterus.*
5. *Sutton, R. L. *The Absorption of Ointments.*
6. Power, D. *On Recent Advances in the Surgical Treatment of Syphilis.*
7. Harston, L. C. E. *A Case of Ochronosis.*
8. Gardiner, F. *Satinwood Dermatitis, with a Suggestion as to Treatment.*

2. Smith believes that oil of turpentine used internally is a valuable drug in many conditions in children, and that its use has of late years been much neglected by the profession at large. He has had excellent results with it in purpura and other hemorrhages in children, giving it in conjunction with castor oil. In smaller doses he has used it with good effect in typhoid fever. In adults, in cases of unhealthy conditions of the intestinal mucous membrane with colic, cramps, etc., it has apparently done good work. Ten drops of turpentine with thirty drops of spirits of nitrous ether has been valuable in stopping cases of obstinate hiccough.

5. Sutton has experimented on the absorption of various kinds of ointments and has found that lard, simple or benzoinated, and pure goose grease, are the most quickly absorbed of all the substances tested. Lanolin alone is absorbed very slowly; mixed with a more fluid material, as olive oil, it readily enters the skin. [J. B. H.]

Deutsche Medizinische Wochenschrift. No. 18.

April 30, 1908.

1. *v. Hansemann, Sonnenburg and Kraus. *A Review of the Etiology and Pathogenesis of Appendicitis.*
2. *Klieneberger. *The Ophthalmo-Reaction for Tuberculosis, a Method at Present Useless for Clinical Purposes.*
3. *Bönniger, M. *A Case of Renal Diabetes.*
4. Ehrmann, R. *On the Physiology of the Adrenal Glands and Substances Which cause Dilatation of the Pupils.*
5. Peyser, A. *The Demonstration of Fracture of the Base of the Skull by Means of the X-ray.*
6. Schindler, C. *The Gaiffé-Walter Milliampère Method for Regulating the Dosage of the X-ray.*

1. This article is a review of present knowledge with regard to the etiology of appendicitis, from the points of view of the pathologist, the surgeon and the internist. The probability that in some instances the infection is carried to the appendix through the blood current from a diseased focus, especially the tonsils, is considered.

2. Klieneberger's observations on the ophthalmo-reaction have led him to the conclusion that neither its absence nor its presence can be of much use, either from the point of view of diagnosis or prognosis. A considerable proportion of patients with proved tuberculosis failed to respond to the test, not only in the third, but also in the second and first stages. Moreover, some patients with positive reaction failed to show any trace of tuberculosis at the autopsy. [These results are at variance with those obtained by other authorities, and might possibly be due to difference in technic and a lack of extreme thoroughness the performance of the autopsy.]

3. By renal diabetes is understood a glycosuria dependent upon altered function of the kidneys, such as takes place after the injection of phloridzin. Bönniger adds one more case of spontaneous renal glycosuria to the few already on record. The patient, a drunkard, has constantly excreted for three years small amounts of sugar with the urine. The glycosuria could not be made to disappear by withdrawals of carbohydrates from the diet, and was not increased after the administration of dextrose. The sugar content of the blood serum was even below the

normal. Such cases fulfill the postulates which have been drawn up for renal diabetes, but cannot be absolutely proved to be of renal origin.

No. 19. May 7, 1908.

1. *Kolle, Heller and de Mestral. *The Standardization of Dysentery Serum.*
2. Strubell. *On the Technique of Opsonic Work.*
3. *Cook, J. E. *The Proteid-Fat Diet in the Treatment of Motor Insufficiency of the Stomach.*
4. *v. Halász. *Alimentary Lactosuria in Diseases of the Stomach.*
5. Friedmann, M. *The Indications for the Induction of Abortion in Mental Diseases.* (Continued article.)
6. Pfalz. *Skin Transplantations for Burns of the Eyelids.*
7. *Rietschel, H. *The Use of Carbohydrates in Infant Feeding and Their Effect on Metabolism.*
8. Fornet, W. *The Wassermann Reaction in Syphilis.*

1. The authors have found that by the use of white mice the antitoxin content of dysentery serum can be accurately measured. They regard the amount of antitoxin in the serum as the best measure of its efficacy.

3. Cook, from the clinic of H. Strauss in Berlin, reports on the use of a diet consisting mainly of fat and proteids in the treatment of motor insufficiency of the stomach, as advocated by Strauss. By means of the fat test breakfast of Strauss and Leva [see review in Boston Medical and Surgical Journal, June 18, 1908, p. 954], he estimated the motility of the stomach before and after treatment. The fat-proteid diet is indicated only in those cases of motor insufficiency in which there is a normal or increased secretion of hydrochloric acid. Its efficacy rests on the fact that the fat decreases the secretion of hydrochloric acid without lessening the motility to any great extent, and is easily digestible, while the exclusion of carbohydrates prevents fermentation in the stomach. The diet he used consisted almost entirely of fats and proteids given in a very easily absorbable and non-irritating form: milk, cream, butter, yolks of eggs, with small amounts of mashed potato. Four cases of marked dilatation of the stomach due to ulcer at the pylorus were markedly benefited or cured by this treatment, and the motility was improved, although the size of the stomach remained the same.

4. Halász found from the observation of 78 cases that alimentary lactosuria does not occur either in normal individuals or in those with diseases of other organs than the stomach. Out of 23 cases of gastric diseases, chiefly dilatation or cancer, he found alimentary lactosuria after the administration of 150 gm. of lactose in 22. He does not ascribe to this phenomenon anything more than theoretical importance.

7. Rietschel advocates the addition of cereal decoctions to the milk given to infants after the age of two months. Carbohydrates may be given more freely in the form of starch after the sixth month. In babies with atrophy due to fat indigestion, the addition of carbohydrates is essential. The use of a diet in which carbohydrates predominate is not allowable for more than a week under any circumstances. If such a diet is long continued, it leads to serious disturbances of nutrition, which he classifies under three heads: First, atrophy due to inanition; second, atrophy combined with edema, due to a disturbance of the water balance or of the salt balance. Such infants may gain weight very rapidly, but this is due merely to the retention of water. This may take place to a lesser degree without the appearance of demonstrable edema. The exact mechanism of this water retention is not clear, but it is seen more often after a diet rich in carbohydrates, especially after the use of artificial foods. The third and rarest form shows a general state of hypertonicity of the muscles, in which the muscles are very hard and there is opisthotonos and retraction of the neck (hydrocephaloid of Marshall Hall). The treatment of these conditions consists in the withdrawal of carbohydrates and the return to milk, preferably to mother's milk. [W. T.]

Münchener Medizinische Wochenschrift. No. 17.
April 28, 1908.

1. Weber, E. *Comparative Physiological Experiments on Man and Dog.*
2. *Müller, E., and Peiser, A. *New Methods in Treating Purulent Processes.*
3. v. Brunn, M. *An Effort to Improve and Simplify the Method of Disinfection of the Skin.*
4. Esser. *Etiology and Symptoms of Barlow's Disease.*
5. *Nieter, A. *The Metatyphoid Bacilli.*
6. Horiuchi, T. *Certain Food Preparations from the Point of View of Specific Precipitation.*
7. Geret, L. *Examination of "Puro" Meat Juice.*
8. Albu, A. *The Treatment of Perityphlitis.*
9. Frankenburger, A. *Sanitorium Treatment and Its Indications.* (Continued article.)
10. Grosse, P. *A Case of Thiosinamin Poisoning.*
11. Riehl, M. *The Direct Examination of the Gastric Mucosa.*
12. Axmann, H. *A New Method of Testing Actinic Light Waves.*
13. Davidsohn, F. *The Technic of X-ray Photography.*
14. Faulbar. *An Improved Hypodermic Syringe.*
15. Jacob, L. *The Value of the Karell Cure, Etc.* (Concluded.)
16. Bacmeister. *The Genesis of Gallstones.*

2. It has been found that pus from acute infectious processes, when placed on plates of Loeffler's blood serum and incubated, causes small depressions to form where it is in contact with the medium. Necrotic material from tuberculous abscesses, etc., does not produce a depression. Müller divides these two sorts of pus into the "hot" or polymorphonuclear containing pus, and the "cold," which contains mostly necrotic tissue and lymphocytes. The former contains an enzyme, which dissolves the albumin of the blood serum. This enzyme is derived from the polymorphonuclear neutrophiles; the tuberculous pus is without this proteolytic ferment. This proteolytic action can be weakened or stopped by the addition of its antiferment, which circulates in the blood or is found in the fluids removed by puncture from belly or chest. The polymorphonuclear neutrophiles act as ferment carriers and cause proteolysis in purulent foci. This action furthers absorption, therefore addition of antiferment should stop resorption and bring to an end the breakdown of the proteid substance, in a "hot" abscess. Bier's hyperemic treatment probably depends on the action of this antiferment. It is better still to wash out the abscess cavity with fluids containing much antiferment (blood serum, etc.). The artificial use of such fluids should supply all the protective enzymes, etc., of the body directly to the diseased part.

Peiser, acting on the above theoretical and experimental work of Müller, has treated about one hundred cases of localized purulent affections. In no case did any harm arise from the procedure. The results were, in the main: (1) Lessening of the amount of pus; (2) quick demarcation and cleaning of the wound; (3) drop in temperature and rapid healing. The author advises the use of the antiferment treatment in "all acute processes which lead to abscess formation." The action is through the actual contact of the antiferment. The cases best suited for such treatment are abscesses which are sharply localized and have one large cavity. The cases of widespread infection without sharp demarcation (as skin phlegmons, carbuncles, etc.) may be much benefited if broad incision and careful application of the antiferment serum on wicks be made. The use of this method is contra-indicated in cases of bone infection. The method employed by the author was to use blood serum obtained from the patient to be treated. Where no syphilis exists, serum from chest or ascitic fluid of another individual filtered through a Chamberland filter may be used with impunity. The author includes the history and description of some typical cases in which the results were highly satisfactory.

5. Nieter has found no difference in the growth of metatyphoid bacilli and typhoid bacilli on ordinary agar; neither could he at any time find the crystals described by Mandelbaum in the growth of metatyphoid organisms on glycerin agar. That the metatyphoid regularly breaks up glycerin agar, while the typhoid bacillus does not, does not seem to be true. The author could find no difference between metatyphoid and typhoid bacilli in their serum reactions. He concludes that as yet it is impossible to separate the typhoid and metatyphoid bacilli. [R. D.]

BERLINER KLINISCHE WOCHENSCHRIFT. No. 17.

APRIL 27, 1908.

1. *RICHTER, E. *Pericardial Friction Sound Due to Adhesive Pericarditis.*
2. LENZ, G. *Results of Late Observations in Sympathetic Ophthalmia.*
3. *HINRICHS, W. *Interference with Laryngeal and Esophageal Function by an Enlarged Thymus.*
4. ROSENFELD, G. *The Modes of Sugar Oxidation.*
5. AUFRECHT. *The Care of Tuberculous Individuals.*
6. FRÄNKEL, B. *The Question of Permanent Benefit Derived from Sanatoria.*
7. BAUER, J. *Wassermann's Lues Reaction.*
8. COHN, S. *Local Hypersensitiveness of the Conjunctivæ to Tuberculin.*

1. Richter reports the case of a man thirty-two years old in whom a pericardial friction sound was audible over the central part of the cardiac dullness, which, with the other symptoms, led to the diagnosis of acute pericarditis. The autopsy showed an almost totally obliterated pericardium, with here and there small effusions of blood in the meshes of the obliterating connective tissue, which would account for the friction rub heard during life. The author points out that the presence of a pericardial rub is not, therefore, pathognomonic of an acute pericarditis, a point often forgotten by the clinician.

3. Hinrichs reports a case of an infant ten weeks old, who developed signs of laryngeal and esophageal obstruction, the most marked symptom being the regurgitation of food. A diagnosis of enlarged thymus was made, as substernal dullness was increased, and a tremor could be felt above the sternum when the child's head was thrown far back. An operation was performed and part of the thymus removed, with relief of symptoms, and betterment of the general condition. This is the eighth operation of this kind reported. The author lays stress on the fact that the gland must not be entirely removed at operation, but as much as possible must be left *in situ*.

[R. D.]

THERAPIE DER GEGENWART.

MARCH, 1908.

1. *v. RENVERS, R. *The Treatment of Gallstones.*
2. *UMBER, F. *Tannyl, a New Intestinal Astringent.*
3. ARONSOHN, E. *The Medicinal Treatment of Febrile Conditions.*
4. NAUMANN, H. *The Physical Treatment of Asthma.*
5. DAVIDSOHN, H. *Dangers in the Irrational Use of Electric Light Baths.*
6. MÜHSAM, R. *Inoculated Tuberculosis of the Tendon Sheaths in Nurses.*
7. KAREWSKI, F. *May the Physician Be Held Responsible for the Non-Performance of an X-ray Examination?*
8. WALTHER. *Results of Pessary Treatment.*

1. v. Renvers, speaking from his own experience, holds that the physician must divide gallstone disease into two classes, i. e., those cases with bacterial infection of the gall passages, and those without infection. That the latter condition may exist has been proven by post-mortem examinations, at which stones have been found in otherwise normal gall bladders. The stones are, usually, of cholesterin. When such stones become impacted in the ducts, causing colic, the important diagnostic point is the absence of fever, which, taken with severe pain, and possibly with jaundice, should be most suggestive of an uninfected gall bladder. The course of such a condition may be either through irritation to bring about a chronic catarrh of the gall bladder, with further calculus formation, or, more dangerous, there may supervene a secondary infection of the gall bladder from the duodenum. In contradistinction to the aseptic gallstone disease is that condition wherein an infection of the gall passages antedates and causes the stone formation. In the former class of cases a stone impacted in the cystic duct will cause hydrops of the gall bladder, without fever, but with pain. The uninfected stones may be latent for years, and then a colic may be precipitated by sudden hard exercise, or by secondary infection, brought about in the course of an ordinary infectious disease.

2. Umber has investigated the clinical value of "tannyl," a combination of tannin and casein. In severe diarrheas he finds it much more efficacious than the other intestinal astringents, especially in intestinal tuberculosis, which is accompanied by extremely obstinate diarrhea. The drug is a tasteless, non-poisonous, almost insoluble powder, and should be given in doses of 1, 2 or 3 gm. three times a day before meals till normal movements occur.

[R. D.]

DEUTSCHES ARCHIV FÜR KLINISCHE MEDIZIN. 1908.

BAND 92. HEFT 3 AND 4.

1. MÜLLER. *The Relation of the Proteolytic Leucocyte Ferments and Their Anti-Ferments in Normal and Pathological Secretions of the Human Body.*
2. *HOLLINGER. *Hyperglycemia in Fever.*
3. *WEILAND. *The Influence of Exhausting Muscle Work upon the Sugar Content of the Blood.*
4. *MICHAUD. *The Effect of Formolin upon Diabetic Urine.*
5. *EBSTEIN. *Forms of Chronic Liver Lesions in Hereditary Syphilis.*
6. RUBOW. *Respiration in Cardiac Disease; a Contribution to the Study of the Pathology of the Lesser Circulation.*
7. *LUST. *Clinical Experiments with the Intravenous Injection of Strophanthin.*
8. *SCHWENKENBECHER AND SIEGEL. *The Distribution of Leucocytes in the Circulating Blood.*
9. *ROOS. *Objective Representation of the Auscultatory Phenomena of the Heart.*
10. *BUTTERFIELD. *The Non-Granular Stages of the Myelocytes and Their Formation in the Liver, Spleen and Lymph Glands.*
11. PLEHN. *The Water Equilibrium of the Blood. A Reply to the Remarks of E. Grawitz.*

2 and 3. Hollinger finds that in fever the sugar content of the blood is considerably increased, while Weiland finds a slight decrease in the normal amount following exhausting muscle exercise. The authors do not enter into any theoretical discussion of the meaning of these phenomena.

4. Formalin added to diabetic urine as a preservative causes no change in the sugar content, but after its use Michaud finds that there is a complete destruction of the diacetic acid, so that the iron chloride reaction is no longer given. Consequently, when diabetic urine is preserved with formalin, it is necessary to bear this fact in mind, since otherwise very erroneous conclusions will be drawn in regard to the acetone bodies present. There is no effect upon B. oxybutyric acid.

5. Ebstein describes six cases of chronic liver disease with symptoms in the main suggesting cirrhosis, and from his experience with these cases insists upon the practical importance of recognizing syphilis as a cause of chronic liver lesions, even when there is not a distinct history of infection. He strongly recommends that in such cases when the diagnosis is difficult, syphilis be considered as an etiological factor, and the patients be given appropriate anti-syphilitic treatment. He believes that a certain number of cases will in this way be cured, which otherwise would result fatally.

7. For a year and a half Lust has been employing intravenous injections of strophanthin in cardiac cases. He has utilized a preparation of strophanthin manufactured by Böhringer. His cases appear to have been carefully studied by modern methods. He finds that many cases of acute cardiac insufficiency which do not respond to digitalis therapy can be quickly improved by strophanthin injections. The good effect is shown by an increase in the amplitude of the pulse, decrease in the frequency of the pulse, subjective improvement, and after some hours an increased diuresis. The effect can be maintained by smaller doses of the same drug or by means of digitalis given by mouth. He uses ½ to 1 mgm. as the usual dose, repeated not oftener than once in twenty-four hours, since the drug has a cumulative action. In very severe cases, particularly those of marked arteriosclerosis, he advises somewhat smaller doses in the beginning. This method of treatment has been further useful in distinguishing cases of cardiac insufficiency from cases of renal insufficiency,

for, in those cases in which there is evidence of both cardiac and renal lesions, a failure to respond to the strophanthin injections indicates the necessity of active diuretic treatment. In some of these cases, except by such a therapeutic test, it is not possible to distinguish whether the heart or the kidney is primarily at fault. The author believes that such intravenous injections of strophanthin form a valuable addition to our present therapeutic methods in cardiac disease.

8. In the clinical estimation of the number of leucocytes in a given case, all deductions are based on the assumption that the leucocytes are evenly distributed throughout the circulation. Notwithstanding the great importance of knowing whether this is the case or not, comparatively few investigations have been made to determine this point. Goldscheider and Jacob investigated the distribution of the leucocytes in animals under varying conditions, and concluded that there was considerable difference between the peripheral and central distribution. They etherized their animals in these experiments. Schwenkenbecher and Siegel appear to have shown that there is, under normal conditions, no considerable variation in the white blood corpuscles in the different vascular territories, but that the results of Goldscheider and Jacob depend upon the etherization. Schwenkenbecher and Siegel find that this difference disappears in the later stages of narcosis, though it is true that in the earliest stages there is an increased number of leucocytes in the peripheral blood. On the other hand, they find that during active digestion there is a considerable increase of leucocytes in the spleen and liver, while in streptococcus infections there is an increase of these cells in the spleen and in the lungs. It is probable that these differences in distribution occur after certain drugs which are assumed to cause a general leucocytosis, and that the condition is the result of the increased blood supply to the skin and not an actual increase in the number of leucocytes. A further study of this group of therapeutic agents is needed to clear up these points.

9. A number of attempts have been made to devise an apparatus for recording graphically the sounds made by the heart so as to be able to compare them in time and intensity with the impulses which can be recorded by a cardiosphygmogram. Marbe has devised a method for recording changes produced in a flame by the sound waves originating in the heart. It is an application of the principle usually known as König's flame. Roos has used this apparatus in studying a certain number of cardiac cases, and has obtained some interesting results. However, he has not studied a sufficiently large group of cases to justify any general deductions. Still, the method would seem capable of advancing our knowledge of cardiac conditions, though it is too cumbersome for general practical use in its present state, and rather marks an advance in this phase of investigation which, it is hoped, will finally end in a fairly simple apparatus capable of recording simultaneously both sound waves and cardiac impulses.

10. Butterfield has studied the blood in several cases of acute leukemia and pernicious anemia and also the embryonic blood and embryonic organs, with particular reference to the early stages in the development of granular cells. These granular cells of the myelocyte series he regards as arising from non-granular cells similar to the cells described by the hematologists as large lymphocytes. The neutrophilic granules develop from granules at first more basophilic, and in the beginning only a few neutrophilic granules appear in previously non-granular cells. These cells are found in large numbers in the circulating blood and in the tissues of acute leukemia and in the embryo. These non-granular cells are not to be distinguished from large lymphocytes, but it does not follow that the two cells are identical because indistinguishable. When they are formed in the spleen and lymph glands they are formed in the pulp, not in the follicles; in the liver they are formed in the periportal tissue. [The view here expressed is one which has been long held by the hematologists in this vicinity, and these cells are commonly called premyelocytes. Butterfield seems to have advanced no new theory and no new evidence in support of an old theory, though it is very probable that the work done in America on this subject escaped the attention of the German observers.] [H. A. C.]

Miscellany.

AN ANCIENT RECORD OF LONGEVITY.

To those interested in the history of human longevity it is well known that the record upon an old Egyptian papyrus contains a sort of lament of a veteran Egyptian who had attained the age of one hundred and ten years and complains of the discomfort arising from impaired nutrition, loss of vision and general senility. Recently it was stated in a report from Russia that there was presented to the czar a man, aged one hundred and twenty-six years, who remembered distinctly serving in the army in the campaign of Borodino in 1812. Another instance of very advanced age has been discovered in an ancient record, this time in Babylonia, and relates to a member of the gentler sex. M. Pognon, the French consul at Mossul, has recently published a volume of inscriptions copied by him from various old monuments during his long residence in Mesopotamia, and among these is one in cuneiform writing giving the honorable life history of a lady named Soumona Damqa, who was the queen-mother of Nabonidus, the last king of Babylon. The inscription is supposed to be written by herself and it is quite possible that it was dictated by her to a scribe shortly before her decease. It assures us that because of her devotion to her favorite deity, Sin, the moon god, he "had raised her head" (above that of common folk), "had accorded her an illustrious name in the nation, had granted her many days, years, which are down to the ninth year of Nabonidus, king of Babylon, the son issue of my heart, one hundred and four holy years" (she was priestess in the temple), "he gave to me and caused me to live. As for me my eyes are brilliant, my hands and feet in perfect order, my speech clear, and food and drink suit me well." The eulogium gives a complete account of her career, and we know from another cuneiform chronicle that it was in the ninth year of her royal son's reign that her obsequies took place. This record is well worthy of being placed beside others of a long and healthy life. — *Lancet.*

Correspondence.

A CORRECTION.

Boston, July 3, 1908.

Mr. Editor: Since you have done me the honor in your editorial on "The Clinical Surgeon" in the Journal of July 2, 1908, to call attention to my remarks at the recent meeting of the Society of Clinical Surgery, I should like to make an important correction in your quotation.

The word "encouraged" should be substituted for "discouraged," the latter being an error of the original typesetter.

The significance of the context thus becomes clearer.

Respectfully,

R. H. Fitz, M.D.

RECORD OF MORTALITY

For the Week ending Saturday, June 27, 1908.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	—	—
Chicago	508	141	Waltham	5	1
Philadelphia	—	—	Pittsfield	—	—
St. Louis	—	—	Gloucester	9	3
Baltimore	233	95	Brookline	3	—
Cleveland	—	—	North Adams	2	1
Buffalo	—	—	Chicopee	11	6
Pittsburg	—	—	Northampton	12	1
Cincinnati	—	—	Medford	3	—
Milwaukee	—	—	Beverly	6	2
Washington	—	—	Leominster	2	1
Providence	69	24	Hyde Park	4	1
Boston	168	46	Melrose	—	—
Worcester	44	15	Newburyport	—	—
Fall River	42	26	Woburn	1	—
Cambridge	28	10	Westfield	1	—
Lowell	41	15	Marlboro	5	1
Lynn	21	7	Revere	4	2
New Bedford	28	13	Attleboro	3	—
Springfield	17	7	Peabody	—	—
Lawrence	20	9	Adams	3	1
Somerville	25	7	Clinton	3	0
Brockton	14	7	Gardner	3	2
Holyoke	21	8	Milford	—	—
Malden	12	4	Watertown	2	0
Chelsea	5	1	Plymouth	—	—
Newton	3	—	Weymouth	3	1
Salem	11	6	Framingham	—	—
Haverhill	11	2	Southbridge	2	1
Fitchburg	—	—	Wakefield	—	—
Everett	6	1	Webster	—	—
Taunton	10	2	Arlington	8	1

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED JUNE 24, 1908.

Williams, L. L., surgeon. Granted leave of absence for one month from July 15, 1908. June 23, 1908.

Gardner, C. H., passed assistant surgeon. Relieved from duty at San Francisco, Cal., and directed to proceed to Wilmington, N. C., assuming command of the Service at that port. June 23, 1908.

Lavinder, C. H., passed assistant surgeon. Relieved from duty at Wilmington, N. C., and directed to proceed to Stapleton, N. Y., reporting to the medical officer in command for duty and assignment to quarters. June 23, 1908.

White, M. J., passed assistant surgeon. Granted extension of leave of absence for fifteen days from July 1, 1908. June 23, 1908.

Berry, T. D., passed assistant surgeon. Placed on "waiting orders" from June 1, 1908. June 20, 1908.

Manning, H. M., assistant surgeon. Directed to report to the chairman of a board of examiners at the Bureau, Washington, D. C., July 6, 1908, for the purpose of determining his fitness for promotion to the grade of past assistant surgeon. June 23, 1908.

Manning, H. M., assistant surgeon. Granted leave of absence for seven days. June 23, 1908.

Clark, E. S., acting assistant surgeon. Granted leave of absence for ten days from June 11, 1908. June 23, 1908.

Rush, J. O., acting assistant surgeon. Granted leave of absence for fourteen days from July 1, 1908. June 17, 1908.

Stoddard, C. S., acting assistant surgeon. Granted leave of absence for thirty days from June 27, 1908. June 23, 1908.

Mason, M. R., pharmacist. Granted leave of absence for twenty-eight days from July 15, 1908. June 17, 1908.

Watters, H. M., pharmacist. Granted leave of absence for thirty days from July 1, 1908. June 23, 1908.

BOARD CONVENED.

A board of medical officers was convened to meet at Seattle, Wash., for the purpose of examining alien immigrants. Detail for the Board: Passed Assistant Surgeon M. W. Glover, chairman; Assistant Surgeon C. W. Chapin; Acting Assistant Surgeon, F. R. Underwood, recorder. June 24, 1908.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING JULY 4, 1908.

J. F. Uric, surgeon. Detached from the "Pennsylvania" and ordered to report before a naval retiring board at the Navy Yard, Mare Island, Cal., July 10, for examination for retirement, and then to the Naval Hospital for treatment.

J. F. Freeman, passed assistant surgeon. Detached from the Navy Yard, Boston, Mass., and ordered to the "Montana" when commissioned.

J. H. Payne, Jr., passed assistant surgeon. Detached from the Naval Recruiting Station, Cleveland, Ohio, and ordered to the Navy Yard, Boston, Mass., and to additional duty in connection with fitting out the "Salem."

E. C. White, assistant surgeon. Ordered to the Naval Recruiting station, Cleveland, Ohio.

W. S. Hoen, passed assistant surgeon. Detached from the "California" and ordered to continue treatment at the Naval Hospital, Mare Island, Cal.

W. N. McDonell, passed assistant surgeon. Detached from the "Severn" and ordered to Camp Perry, Ohio, July 5, for duty in connection with the Navy Rifle Team.

RECENT DEATH.

Dr. Peter V. Burnett, a prominent specialist of the Williamsburgh section of Brooklyn, N. Y., while suffering from nervous depression, jumped from the roof garden of the Mount Sinai Hospital, where he was a private patient, and died almost instantly, on June 29. He was a native of Connecticut, and was in the fifty-fifth year of his age. He was graduated from the Medical Department of the University of the City of New York in 1876, and afterwards served as interne at Bellevue Hospital. Dr. Burnett was well known as an aurist and rhinologist, and at the time of his death was attending physician to the Eastern District and Nose, Throat and Ear hospitals, Brooklyn.

BOOKS AND PAMPHLETS RECEIVED.

Thaw and His Mental Status. By C. H. Hughes, M.D. Reprint.

Paresis, Epilepsy and Epileptoid as Menaces to Railway Safety. By C. H. Hughes, M.D. Reprint.

The Action of Thionyl Chloride and of Phosphorus Pentachloride on the Methylene Ethers of Catechol Derivatives. By George Barger, M.A., D.Sc. Reprint.

The Action of Thionyl Chloride on the Methylene Ethers of Catechol Derivatives. Part II. By George Barger, M.A., D.Sc., and Arthur James Ewins, B.Sc. Reprint.

Wave-like Variations in Muscular Fatigue Curves. By C. T. Symons, B.A. (Oxon.). Reprint.

The Pathology of the Eye. By J. Herbert Parsons, B.S., D.Sc. (Lond.), F.R.C.S. (Eng.). Vol. IV, Part II. Illustrated. New York: G. P. Putnam's Sons. 1908.

The Economic Advisability of Inaugurating a National Organization of Health. By J. Pease Norton, Ph. D. Reprint.

The Function of Health Boards in the Control of Tuberculosis. By Edward O. Otis, M.D. Reprint.

The Sphere of the Trained Nurse. By W. A. Newman Dorland, A.M., M.D. Reprint.

Evolutionary Phases in the State of American Medicine and Medical Education. By P. C. Remondino, M.D. Reprint.

Modern Medicine. Its Theory and Practice. In Original Contributions by American and Foreign Authors. Edited by William Osler, M.D., assisted by Thomas McCrae, M.D. Vol. IV. Illustrated. Philadelphia and New York: Lea and Febiger. 1908.

A Text-Book of Human Physiology, Including a Section on Physiologic Apparatus. By Albert P. Brubaker, A.M., M.D. Third edition, revised and enlarged. Illustrated. Philadelphia: P. Blakiston's Son & Co.

International Clinics. Edited by W. T. Longcope, M.D., and others. Vol. II, 18th Series, 1908. Philadelphia and London: J. B. Lippincott Co. 1908.

Meat and Food Inspection. By Wm. Robertson, M.D., D.P.H.F.P.S. With Regulations Governing Meat Inspection in the United States. By Maximilian Herzog, M. D. Illustrated. Chicago: W. T. Keener & Co. 1908.

Green's Encyclopedia and Dictionary of Medicine and Surgery. Vol. VIII. Edinburgh and London: William Green & Sons. 1908.

Original Articles.

ENDOCARDITIS.*

BY ARTHUR K. STONE, M.D.,

Physician to Out-Patients at the Massachusetts General Hospital; Physician to the House of the Good Samaritan.

It is my intention to present a series of cases of extreme ulcerative endocarditis, of different origins, and to consider their etiology and to point out the difficulties in the way of making a diagnosis during life. The involvement of the heart is often but an incident in a general infective process. The importance of the organ involved, however, gives it the center of the stage in the later development of life's tragedy.

It has been quite common to describe two varieties of endocarditis, — a simple or benign form and an ulcerative or malignant type. In the light of our present knowledge it seems to me better to recognize an infective and an arteriosclerotic variety of endocarditis. I perfectly well realize that at times the post-mortem picture presents the two types tangled together in a practically unexplainable manner.

Under the old nomenclature one form of the benign endocarditis appeared to be of the deforming variety, a part of the same general process which produces chronic endarteritis (i. e., arteriosclerosis), the sclerotic patches in the aorta, the coronary arteries and the arteries of the brain.

The causal elements in the production of these lesions is not as yet definitely known. We have been wont to suppose that systemic poisons, as lead and alcohol, or the remote toxic action of bacterial activity, as in syphilis, produced the pathological changes.

More recent investigations have shown that arteriosclerosis is not infrequent in children, and that persons having typhoid are more liable to have the manifestations of this disease in later life than those who have escaped typhoid infection; and the spirillum pallida itself may be the active cause in the syphilitic cases. Experimental work also shows that, in the case of some bacteria at least, the active infective process seems to do its deadly work in producing heart weakness by acting upon the blood vessels, rather than upon the heart muscle. As the result of future investigations, we may find that conditions, such as are exemplified in cases I and IV, may develop much more rapidly than we have hitherto supposed, and that these presumably slowly developing arteriosclerotic lesions will also have to be placed in the category of infectious processes. The disease is important according to the situation of the lesion. Thus the extensive lesions in the aorta may give rise to no appreciable symptoms, while a very small plaque in the coronary vessels may cause angina pectoris and sudden death, or, if situated in the arteries of the brain, may lead to a fatal cerebral hemorrhage. If these plaques of endarteritis arise on the valves or extend from the aorta to the valves they cause deformity of the curtains with leakage and consequent symptoms of valvular heart disease. (See cases I and VI.)

All the other forms of endocarditis, both the so-called benign and ulcerative types, are probably the result of direct infection of bacteria from the blood. The amount of the disease and its conditions vary as much as do similar infections in the knee or other joints. In arthritis we are accustomed to see slight, almost negligable, inflammations, or infections, which quickly pass away, leaving no appreciable symptoms, or only those of a creaking or dry joint; while at other times the joints are permanently injured, the capsules thickened and adherent and the smooth glistening joint surfaces made rough, fringes develop and the mobility is destroyed. In a similar manner the smooth, tightly closing valve curtains may be affected in such a way as to cause a slight roughening which is noticeable only on close examination, or to cause nodes of considerable size, which may cause contraction and deformity in the valves. In these cases the inflammatory agent is such that the reaction set up by the presence of the organisms gaining lodgment in the valves is not ulcerative in character, but mostly productive of connective tissue formation, which may or may not become infiltrated with lime salts as time goes on.

In addition to the above conditions there may be an infection with so virulent an organism that not only is there a productive inflammatory process, but also a destructive one as well; or the growth is so active and luxuriant that the newly formed inflammatory tissue is not able to maintain itself and breaks down; in other words, a necrosis sets in, leaving ragged, ulcerated surfaces from which débris and shreds find their way into the blood current as emboli, which cause infarctions in the lungs, spleen, kidneys and brain. (Case II.)

Where there has been old inflammatory disease of the valves there is a tendency for a new and acute process to develop. So that one frequently finds an acute, ulcerative or malignant process engrafted, during the so-called terminal infection, upon an old, long standing valvular disease of the heart. (Case II.) This tendency of inflammatory remains to take on renewed activity was long ago commented on by Paget and has been noted by every one since who has had to do with previously infected joints and mucous membranes and other tissue.

As for the bacteriology of the acute ulcerative and malignant endocarditis there is nothing to add to what is generally known about septicemia. The pneumococcus, the streptococcus and the various staphylococci and the gonococcus and the influenza bacillus, as well as a number of rarer forms of micro-organisms, can all set up this condition. Viewed from this point of view, it seems that all the cases of endocarditis are simple and easy to understand as being, with the exception of the first mentioned group, part of a distinct infective process. The point of entrance of the infective organisms may be very small indeed;

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* Read at the meeting of the American Climatological Association, Boston, June 10, 1908.

so small, in fact, as to escape the notice of the patient. Therefore, after mild sore throats, exacerbations of urethritis, or small pustular eruptions, a general infection may follow. Pepper states that he has known acute endocarditis to develop in the course of a lumbago; or, in other words, a simple stiff back may be of infective origin. I have seen an apparently similar case in a man who had had an acute lame back from getting wet and "taking cold." Seen three weeks later, the patient still had stiffness and spasm in the muscles of the back and a weak and irregular heart with an occasional soft souffle. I sent this man to the hospital on the ground that he had an acute endocarditis in an early and mild stage, and with the hope that with rest in bed at this period of the disease that the endocarditis symptoms would quiet down and not become chronic with deformity in the valve. Such a favorable outcome is frequently seen in the course of an acute infectious arthritis (a rheumatism) where a heart murmur and irregularity develop and pass away without leaving chronically deformed valves to tell the tale. In like manner an endocarditis may develop during an attack of influenza.

During the past winter I have seen several such cases, where heart murmurs appeared during the acute attack of influenza and quickly became less distinct and disappeared with the subsidence of the acute symptoms of the disease. Whether such a phenomenon is due to a dilated condition of the heart due to the toxin, or to weakening of the heart muscles, or to a direct attack on the valves, I cannot definitely say. But the aching and painful joints which frequently accompany this condition and which often persist for some time after the disappearance of the acute symptoms make it seem probable that there is infection on both the joint and valve surfaces. Horden's finding the influenza bacilli in pure culture, both in the blood and later in the lesions of the valves in cases of fatal endocarditis, seem to point to definite infection of the valve surfaces as being the cause of the cardiac weakness and the murmurs heard in the milder cases.

The lesson to be gained from the consideration of cases of acute endocarditis, as a secondary process to a primary and general infection, is that in all conditions in which a general infection may develop, the heart must be watched with the greatest care and the symptoms which might arise from the presence of ulcerative surfaces must be interpreted in terms of emboli and infarcts. This is often very hard to do in the maze of other symptoms which obscure the pathway for the real progress of the disease. (Cases III and IV.)

A great difficulty in the way of a just diagnosis of ulcerative endocarditis is the fact that often these well-marked pathological conditions give rise to practically no symptoms which are associated in our minds with valvular disease of the heart. Case IV, to be recounted later, is an illustration of this fact. Here there were no endocardial valvular sounds, although the patient was examined with great care, and we were very much surprised to find the mass of endocardial new growth on the aortic valves. In the other cases the acute endocarditis was superimposed upon a pre-existing valvular disease, unless in Case V, the endocarditis was probably simply co-existent with the pneumonia, for the patient presented himself with all the *murmurs* present necessary to make a diagnosis of valvular disease, although there were lacking certain signs of long-standing valvular disease when the history is considered in the light of the autopsy findings. Here the acute processes on the valves may have been sufficient to have caused actual leaks; certainly the large clots were sufficient to have prevented the closure of the aortic valve. The general appearance of the edges of the valves seem to make it probable that there was no deformity there before the infection, and that probably the adventitious sounds heard in the heart were developed during the four days previous to his entry to the hospital.

In Case III the large free thrombus was unsuspected and the increase in temperature was supposed to be due to the exacerbation of the rheumatism. The signs in the lungs were incorrectly interpreted, being supposed to be of incipient tuberculosis instead of the condition arising from embolic infarcts in the lung. How long the stenosis at the mitral valve had existed is unknown, but the patient denied all previous cardiac symptoms when she presented herself with apparent sub-acute infectious arthritis. There was nothing from her appearance in the wards to suggest any marked obstruction to the circulation. Only after the rheumatic condition in the joints had subsided, she did not improve, but ran a little elevation of temperature, and developed some râles in the lungs.

In Case II there was long standing aortic disease. The patient improved for some days after entering the hospital, the symptoms of broken compensation largely disappeared, and he was out and about in his chair with everything favorable till a week before his death, when he began to go down hill rapidly. The extreme ulcerative condition of the heart was a complete surprise.

Most of these cases were seen by me while substituting at the Massachusetts General Hospital for Drs. Vickery and Minot, and I am indebted to them for permission to report the cases and also to Dr. Wright for the pathological reports.

Case I. Male (colored). Age, sixty-five. The patient has had no rheumatism and denies venereal disease; tobacco, forty cents a week. He used to have an occasional spree up to ten or twelve years ago. He considered himself well up to six weeks ago. At that time his feet swelled and he felt tired. This increased up to a month ago, when he had to give up work because of the added symptoms of shortness of breath, accompanied by slight palpitation. There has been some cough during the six weeks. Urine is passed two or three times at night.

There has been some loss of strength and weight during the past year, though one year ago he weighed his best.

Examination. — *Heart:* Apex not seen or felt. It is heard in the sixth space, 4¾ in. to left of sternum.

The left border is 5¼ in. to the left and 1¼ in. outside the nipple. The right border is 2½ in. to the right (of the midsternum).

Slight irregularity and occasional intermittence are noticed. The first sound is everywhere replaced by a systolic murmur best heard at the apex and at the aortic area.

At the apex, the murmur has a blowing quality and is of moderate intensity and transmitted to the axilla.

All over the precordia and to the right of the sternum is a rough blowing, louder than elsewhere in the aortic area, and transmitted upward to the neck. The pulses are synchronous, equal, slightly irregular, moderate rate, small volume and low tension.

The artery walls are palpable and slightly thickened at the wrist and elbow.

In the lungs there were mucous râles, moist and dry throughout and more at the bases.

Edge of the liver was not felt.

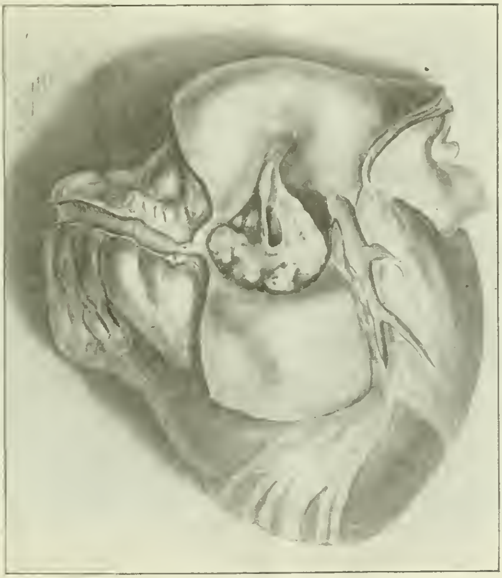
Urine: slight, pale, acid, sp. gr. 1,015. Slightest possible trace of albumin, with a very rare, brown, granular cast, an occasional red blood corpuscle. The whites run 10,000. The *sputum* was streaked and showed pneumococci, a few influenza bacilli, but no bacilli of tuberculosis.

Five days later: A systolic thrill was made out in the aortic area. A very faint, inconstant, diastolic murmur was heard in the third space to the right of the sternum.

There was no Corrigan pulse or pistol shot. Urine as before.

Diastolic murmur was not heard again. Edema disappeared.

Five days later: Patient slept well through the night till 4 A.M., when he suddenly began to breathe with a blowing sound, the pulse slackened and he died without cyanosis.



Case I.

Autopsy No. 1,582. *Anatomical diagnosis.* — Chronic endocarditis of the aortic valve (stenosis). Hypertrophy and dilatation of the heart. Chronic passive congestion. Chronic pleuritis.

The body of a man, sixty-five years of age, well developed and poorly nourished.

The pericardium is not remarkable.

Heart, 525 gm. On section the myocardium is firm and rather pale. There is no evidence of interstitial increase. The left ventricle wall measures 1.5 cm., the right ventricle wall 3 mm. The columnæ carneæ are fairly well marked and the auricular walls are very slightly thickened. The cavities are very slightly enlarged. The mitral valve circumference 8.5 mm. and the tricuspid 11 cm. A slit-like opening in the aortic valve measures about 1.5 cm. in length and 2 to 3 mm. in width. The coronary arteries are free. The intima of the right presents a few fibrous plaques. The intima of the left is fairly smooth, but the wall of this artery at its first portion extends over and is impinged upon by the calcareous material in the region of the aortic valve.

The tricuspid valve is not remarkable. The mitral valve is not remarkable, except that the posterior surface of the curtain in that portion of the valve, where it is in relation with the aortic valve, is adherent to the calcareous changed aortic valve.

The aortic cusps are fused and their identity lost in a calcareous mass of material, the central portion of the irregular superior surface of which rounds up slightly into the lumen of the aorta, and extending across the crest of which is a small slit-opening about 1.5 cm. in length and 2 or 3 mm. in width. The marginal tissue of this slit is fibrous in character and slightly yielding. From the inferior surface of this calcareous valve a rather broad ridge-like calcareous mass extends into the myocardium between the right and left ventricles and reaches to just beneath the endocardium in each ventricle, extending for a distance of about 5 cm. on the side of the left ventricle, giving to the mass a slightly forked appearance. The mass is plainly visible through the endocardium in each ventricle and tapers to a point.

Aorta smooth.

Bacteriological report. — Cultures on blood serum from the heart, liver and spleen gave no growths.

Case II. Male. Age, twenty-seven. Single.

Family history and habits of no moment. Denied venereal.

The patient had rheumatic fever eight years before; was sick two months; he again had rheumatic fever four years before; this time he was in a Philadelphia hospital and was told that he had heart trouble. Since then he has had twinges of rheumatism.

For two years there has been steadily increasing dyspnea, palpitation and orthopnea, but no edema till eight weeks ago, when his legs began to swell. There was slight cough and precordial distress on exertion. He has slept sitting up for a year and been at different times in hospitals in Norfolk and Providence. Now he is worse than ever before. There have been gastric symptoms for a year and he has been constipated.

At time of entrance the bowels had not moved for a week.

During the past two years, " spots " would come out on his legs from time to time.

Examination: Well developed; poorly nourished.

Heart: Impulse and dullness correspond to the fifth space, 1 in. outside of the nipple. No dullness to the right of the sternum. Action rapid and regular. The pulmonic sound is greater than the aortic. First sound accentuated.

Presystolic thrill and murmur at the apex, but these signs are not constant. There is a *systolic* mitral murmur transmitted to the axilla and a diastolic murmur heard at the third costal cartilage.

The pulses are equal, regular, synchronous and markedly water-hammer in character. The arteries are not palpable. The lungs are hyper-resonant, almost obliterating the cardiac area of dullness. At the right base there are a few râles with dullness.

The liver dullness extends from the fifth rib to 2 in. below the costal margin. The edge is palpable, and the spleen is easily palpable.

There are purpuric spots on the legs and thighs. The fingers are clubbed.

There is edema on the legs, scrotum and back, and a slight amount of fluid in the belly.

Hgl. 65. Whites, 5,600. The urine shows a small amount of albumin, with many hyaline and fine and coarse granular casts. Sp. gr. 1,020.

Pulsation is to be seen in the palmar arches.

In a few days the edema became less and at the end of a week, the patient was out in a wheel chair, but very weak, having, however, much less distress than on entry. Four days later he began to lose strength rapidly and at the end of two days died suddenly. The temperature was 102° on entry, but afterwards ranged from 100° to 98.6° at the end of the first week.

During the second week the range was from subnormal to 99°, till the last day, when it went to 101°, and during the last four days of life ran between 99.5° and 100.5°.

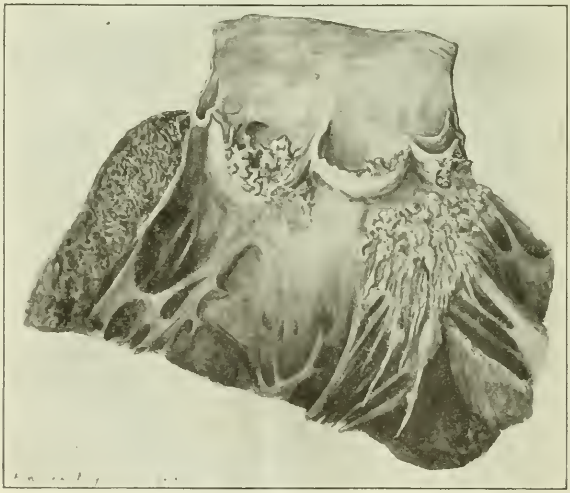
Autopsy. *Diagnosis.* — Ulcerative endocarditis of aorta and mitral. Hypertrophy and dilatation of the heart. Chronic passive hemorrhagic infarcts of right lung. Infarcts in spleen and kidneys. Hydropericardium and thorax. Slight ascites and anasarca.

Subacute glomerule, mephitis.

Liver: A hand's breadth below the costal margin.

Heart: Weight, 710 gm. Myocardium, pale and firm. Left ventricle, 14 mm.; right ventricle 5.6 mm. Auricular walls thickened; columnæ carneæ in right ventricle, thick and well marked in the left.

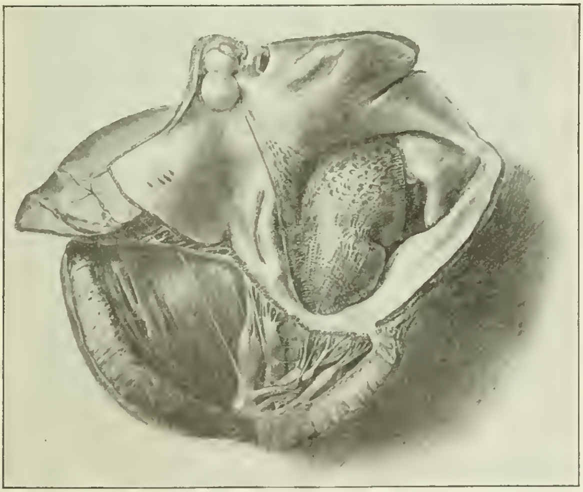
Mitral valve, 8 cm. in circumference. Aortic valve 6.5 cm. in circumference. Tricuspid valve, 12 cm. in circumference, pulmonic valve, 8 cm. in circumference; nothing remarkable concerning these two.



Case II.

Mitral valve: The curtain is generally thickened and shows pretty much around its free margin, grayish-yellow to reddish granulations slightly heaped up in places and which are prolonged in these situations as quite long grayish filamentous process to which blood clots are adherent. In one or two places these processes are grayish, granular, short and tit-like. At one or two points grayish-yellow to reddish slightly shaggy material extends down along the chordæ tendinæ, which are somewhat shortened and thickened. In the midportion of the mitral curtain, near that part which adjoins the aortic valve, there is a small, red, nipple-like mass, which measures 1 cm. x 5 cm. x 6 cm., and which is rather soft and projects from the surface.

The aortic cusps show much grayish-yellow to reddish granular material heaped up in places and showing in these situations grayish, granular, short, tit-like processes. The material is massed mostly on one of the cusps. The other two cusps show, besides fibrinous thickening, some irregular deformity. That cusp most profoundly affected shows, in the midst of the material mentioned, a small calcareous patch, and a little above this, at a point where the material is a little redder and a little softer, there is a small depression on the superior surface of the cusp, which dips very slightly into the left ventricle and at the lowest point of which there is a very minute opening.



Case III.

To the vegetations on this cusp blood clot is adherent.

The endocardium just below the cusps and opposite the posterior surface of the mitral valve, when the curtain is common to the two valves, shows a large area of grayish-yellow material, slightly shaggy and felt-like. At a point in this area, and opposite to the base of the nipple-like projecting mass present in the mitral curtain, there is an opening extending into the mass. Coronary arteries are free, smooth. The aorta is smooth. The liver weighs 2,070 gm.; the spleen, 590; the kidneys 485. Meckel's diverticulum, 250 cm. above ileocecal valve.

Case III. Female. Age, twenty-seven, married.

Habits: Tea, 2 cups; no coffee. Using wine lately as a medicine.

May 26, 1905. *P. H.:* Measles and pneumonia as a child. Pleurisy five to six years ago.

P. I.: All right up to five weeks ago when left shoulder and left knee became painful. No redness or swelling. Lasted two days, then went into right elbow, lasting about the same length of time. Then ankles were affected. Pain would return every once in a while to left shoulder. Slight pain in the right wrist yesterday, but to-day both knees are painful. Appetite good; bowels regular.

Sleeps poorly on account of pain.

P. E.: Well developed and nourished. Skin and mucous membrane pale. Pupils: left, right react normally. Tongue moist, heavy, white coat. Teeth fair. Throat slightly reddened. Glands in neck, axillæ and groins.

Heart: Impulse and dullness correspond in fifth space; nipple line 4 in. from midsternum. Right border 1 in. from midsternum. Action regular, sounds of good quality. Presystolic thrill palpable at apex. Loud presystolic murmur heard at apex and mitral area, loudest at apex, transmitted toward axilla. Murmur ends in sharp first sound. Second sound at apex scarcely audible.

Pulse, equal, regular, synchronous, good volume, fair tension.

Lungs: Over left back slight dullness on percussion; slightly diminished vocal and tactile fremitus. No râles.

Liver and spleen not to be felt. No edema. Both knees somewhat puffy and painful on motion.

Temperature, 100.6°; pulse, 104; respiration, 28. Blood: Hgl., 85%; whites, 10,300.

Urine: H. ac., 1,026; alb. = S. P. T. Rare hyaline cast. Few small and large round cells. Re = 2.14%. S. B. D. = 0, very rare blood cell. Many squamous cells.

May 28, 1905. Patient feels much more comfortable to-day. Temperature has dropped nearly to normal and patient is practically free from pain. Cardiac condition good. There is a very marked palpable presystolic thrill, which can be felt over a considerable area about region of apex.

June 18. Feels very comfortable one day and complains of general pains the next. At present the knees cause the most pain and are quite stiff.

June 25. Has no complaint, but running a slight fever. Heart condition unchanged.

June 29. Has slight fever and occasional pains in the knees. This morning there were numerous moist râles in both lungs, with a few dry crackling râles just below the left clavicle. No change in the dullness, but breathing of the broncho-vesicular type.

June 30. Sputum: Little mucus; no tubercle bacilli; a few pneumococci.

July 1. Patient has been looking pale and weak for the last day, but has had no complaint and, except for slight fever, would have been up. Vomiting last night which was considered to be due to medicine. Vomited ½ cupful of greenish material at 1 A.M., 2.30 and 5 A.M., feeling better after each spell. Pulse strong. At 5.45 A.M. found practically pulseless and died before house officer reached her. There had been no signs of marked dyspnea or struggling.

Autopsy. The body is that of a fairly nourished woman, twenty-seven years old, with slight, soft edema of the legs. On the skin of the legs, arm and back are small purplish elevated areas, viz., infarcts. The *lungs* show chronic passive congestion and several small hemorrhagic infarcts with the occluded branches of the pulmonary arteries.

There are numerous small ecchymoses with visceral pericardium. The *heart* weighs 430 gm. The myocardium is not remarkable. The cavities are all large, especially the left auricle. The *mitral orifice* is represented by a small slit. The curtains show considerable fibrous thickening. On the free edge there is a row of minute gray-red coxcomb-like granulations. The *tricuspid valve* curtains are slightly thickened and on the free edge is a row of granulations similar to those of the mitral valve.

In the left auricle a large thrombus mass, 6.5 x 5.5 x 1.5 cm. is found free in the cavity. In shape it is a flattened ovoid, tapering out into a thin fin on one side, which extends apparently into the auricular appendage. In the auricular appendage are three or four small, yellow, round, adherent thrombus masses. The other *organs* are not remarkable. The *head* was not opened. Culture from the liver showed streptococci. No growth from the spleen.

Culture from heart's blood was not taken.

Artery in the liver lobe of the right lung. Infarcts of the skin.

Case IV. Male. Age, fifty.

Habits: Two and three beers a day. Drank whiskey heavily up to a month ago. Tobacco, none. Denies venereal disease.

P. H.: Children's diseases. Typhoid twenty years ago. Mumps fifteen years ago.

P. I.: Ten days ago (May 31, 1905), after eating largely of boiled dinner, felt much distress in stomach. Since then his digestion has been poor. No vomiting. Seven or eight days ago (about June 2), he had chilly sensations and since then has felt feverish and weak. Has had a hacking cough for last week. Though pretty sick, has kept at his work every day. Appetite very poor.

P. E.: Well developed and nourished.

Heart: Impulse and dullness correspond in fifth space; inside nipple line 3½ in. from midsternum. Not to right. Action regular. Sounds of good quality, pulmonic second greater than aortic second. *Pulses* equal, regular, synchronous, of good volume and tension. *Arteries* barely palpable. Lungs dull in right back, with many râles.

Temperature, 104°; pulse, 108; respiration, 35.

Blood: Hgl. = 85%; whites, 17,100.

Urine: N. ac., 1,018; alb. = s. t.: + u = 1.25%. No sugar. Sediment slight. Few small round cells. No casts seen. Whites, 11,000.

Temperature still elevated. Feeling and looking better this morning.

Sputum: Muco-purulent; microscopic examination shows numerous pneumococci, but no bacilli of tuberculosis.

June 13, 1905. Temperature has dropped 2°, but no crisis yet. Patient feeling pretty well. Dullness has extended upward toward apex of right lung and many coarse moist râles are heard over front of the right chest.

June 21. Consolidation has spread to the right base behind, but causes no symptoms. No hiccough. Chart resembles a typhoid with the temperature gradually falling; 99° in morning and 101° at night. Conditions remain unchanged. Range of temperature has lessened, but the morning temperature has an upward trend; 100° this morning. Numerous crackling râles at the right base of lung, front and back with broncho-vesicular breathing and increased tactile fremitus and vocal resonance. Sputum examination negative, but case apparently one of an underlying tuberculosis.

June 28. Temperature has been gradually rising the last few days, but fell to 99° this morning. Breathing of the broncho-vesicular type with slight increase of fremitus and voice which are quite marked on the normal side. Crackling râles more numerous and have extended up to the midscapular in the back. Slight cough, but non-suggestive sputum. Out of doors daily and on supporting diet.

July 2. Entirely lost his appetite three days ago, but better now. Temperature has been about 102° the last three days, but below 100° this mornnig. The breathing in the upper part of the lung has improved. Harsh breathing remains just below left clavicle.

July 5. Sputum now contains many influenza bacilli and appears to come from a case of slowly resolving pneumonia, but the signs in the right chest remain unchanged, while there is harsh breathing over the left back, but no râles heard over this area. The temperature falls to 99° for a day or two and then climbs to 102°; very irregular.

July 9. Patient losing ground. Fever has been rising slowly to 104°, but 102° this morning. Complains of general weakness. Signs of a consolidation at the right apex have increased. Fine crackling râles are more numerous and have extended further up the back. Breathing in front below the clavicle on the right remains about normal, and harsh on the left, but no râles heard.

July 12. Lung examination continues about the same, but patient looks weaker and moves only with much exertion. Two days ago pulse jumped to 150 per minute, but soon quieted down.

July 16. Condition changes little. Hollows below clavicle more marked and patient handles himself less readily on account of weakness. Breathing at the left apex is high pitched and the signs of consolidation at the right apex are marked as far down as the spine of the scapula behind. The breathing in front right remains broncho-vesicular but râles are now present.

July 19. Grows weaker daily; area of bronchial breathing just below the spine of the scapula on the left. Fever remains at 103°–104°.

July 21. Temperature 101° this morning, but looks weaker.

Occasional spell of coughing.

July 24. Temperature, pulse and respiration have all shown an upward tendency and patient has been practically unconscious the last twenty-four hours and died at 12.15 P.M.

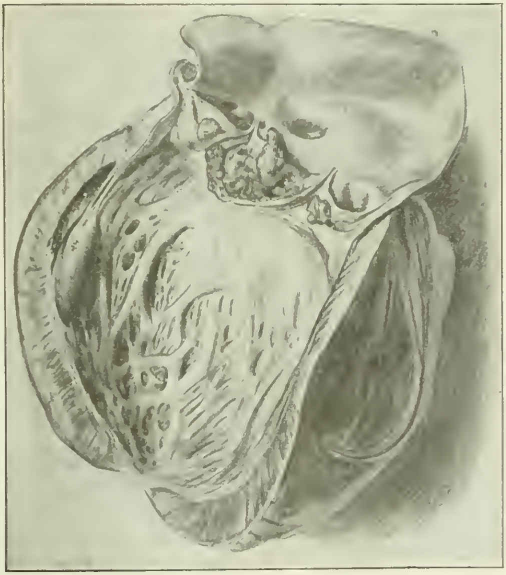
Almost daily examination of the sputum failed to show bacilli of tuberculosis.

AUTOPSY. There is slight edema; and slight arteriosclerosis of the arteries.

The *right lung* is almost entirely consolidated. In the upper portion of upper lobe and rarely in other lobes are typical caseous areas and tubercles of tuberculosis. Tubercle bacilli are demonstrated. Microscopically in the lower lobes there is a frank pneumonia.

The *left lung* shows at the apex and lower portion of the upper lobe the caseous areas and tubercles of tuberculosis. The lower lobe is consolidated and shows a few scattered tubercles.

The pericardium contains considerable cloudy fluid, which shows nothing microscopically.



CASE IV.

The heart weighs 365 gm. and is regarded as slightly hypertrophied and dilated.

Two of the aortic cusps present small, yellow, adherent granular patches almost 1 cm. x 8 mm. The third cusp presents a large, irregularly creviced, grayish-yellow mass, rising from the cusp and partially from the endocardium.

The mass measures 3.5 cm. x 3 cm. x 2 cm. It has a ragged lobe through it. A narrow strip of blood-clot is adherent. Microscopical examination, both in smears and hardened sections, shows very many pneumococci, together with streptococci and bacilli. The organisms were also grown in culture, the pneumococcus predominating. The other râles are normal.

From the heart's blood, liver and spleen slight growths of pneumococcus and streptococcus were obtained.

Except for adhesions about the liver and spleen, the other organs are in no way remarkable.

CASE V. Male. Age, twenty-seven, single. Pneumonia.

Nov. 25, 1905. *Habits:* Moderate amount of whiskey and beer. Tobacco immoderate, i. e., 40 cents of plug, 6 boxes of cigarettes and 30 cigars per week. He had typhoid fever at twenty. Rheumatic fever, sometime later at which time he was three months in bed. Otherwise he has been well.

For four days he has had sharp pains in the side; he had a chill, cough, fever; the bowels have been constipated; he has slept poorly and the symptoms have persisted.

Examination. — *Heart:* Impulse and dullness in the fifth space, just outside of the nipple, 4½ in. from the midsternum. The action was regular and of good quality.

First sound at the apex was markedly accentuated and heard over the precordia.

There was a systolic and presystolic murmur heard at the apex and in the mitral area, loudest at the third interspace and in the aortic area. The pulmonic second sound was greater than the aortic.

Pulses full and bounding, but regular and synchronous.

Lungs: Area of consolidation at the right apex to the third rib and involving the whole back, with râles to the base.

Blood: Hgl. = 100. Whites, 13,400. Urine, trace of albumin, but no casts.

Sputum was rusty, small in amount and contained a small number of pneumococci, but no tubercle bacilli.

Four days later. The temperature fell to normal, and coarse moist râles appeared over the whole right back.

Four days later. The temperature suddenly rose to 104°, pulse 120; otherwise condition appeared the same, except for pain in the right shoulder joint, which is neither red nor swollen.

Three days later. The temperature in the morning was 100°, in the evening 104°. The diastolic murmur was very loud and to be heard all over the precordia.

Heart sounds very loud and snapping.

Pulse at the wrist is of poor volume and tension. The breath sounds are somewhat harsh at the left apex and axilla and the fremitus is increased. A suggestion of new pneumonic process.

On the sixteenth day after the first attack. Rapid breathing with weak pulse developed suddenly and patient died.

Autopsy. *Anatomical diagnosis.* — Lobar pneumonia. Organizing pneumonia. Fibrous and polypous endocarditis of the mitral, aortic, tricuspid and pulmonary valves. Hypertrophy and dilatation of the heart. Infarcts of the spleen and kidneys. Pneumococcus septicemia.

The body of a man twenty-seven years of age, well developed and nourished.

The pericardium contains a slight excess of pale fluid.

Heart, 493 gm. On section the myocardium is fairly firm, pale and rather cloudy. The left ventricle wall measures 12 mm., the right ventricle wall 4 mm. The auricular walls are thick. The columnæ carneæ are fairly well marked. The cavities are enlarged. The mitral valve circumference 8 cm., the aortic 7 cm., the tricuspid 8.5 cm., the pulmonary 7 cm. All of the valves show more or less fibrous thickening and consequent deformity. Along the free edge of the thickened mitral curtain there are numerous grayish to gray-red minute granulations and in several places small masses of grayish red to grayish-yellow adhering fibrinous-like material. In places these masses are grayish yellow, rather smooth, and appear as small rounded nodules or protuberances. Along the aortic cusps there are many gray-red to grayish-yellow granulations. The free edge of the tricuspid valve supports many masses similar in character to those along the mitral valve. Coronary arteries free.

Aorta smooth.

Cultures on blood serum from the *heart* show many colonies of the pneumococcus.

A slight growth of the pneumococcus was obtained from the liver.

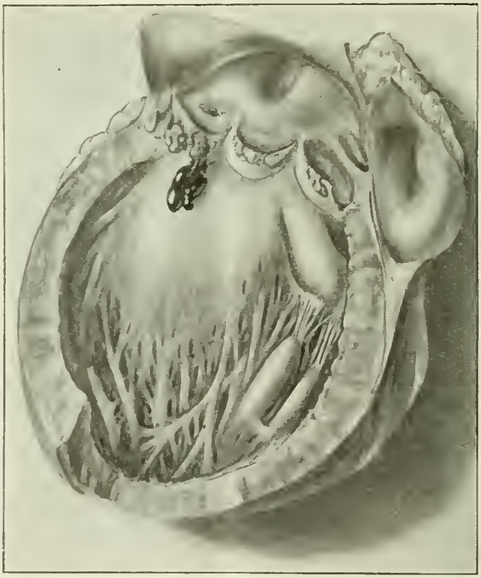
Microscopical examination. — *Heart:* Vegetation of heart valves. Many pneumococci in the substance of the vegetations.

Sections presumably from the heart valves show necrotic fibrous tissue and infiltration with leucocytes.

Spleen: Necrosis.

Kidney: Not remarkable.

Lung: Extensive organizing pneumonia with well-developed connective tissue plugs in air cells.



Case V.

Case VI. Male. Age, thirty-nine.

There had been no rheumatism. He had had gonorrhea three or four times the last five or six years and also a soft chancre at the same time; he had had bubos eighteen years ago, but had never had a hard sore (?), although sixteen years ago he had had a rash all over his body, with sore throat and alopecia, and had taken mercury for five or six months. No other serious illness.

The patient had used alcohol irregularly, chiefly beer. No tobacco for one year, but before that had averaged 10 to 12 cigars daily.

Present illness began suddenly.

One year with shortness of breath and cough. There had been orthopnea intermittently for a year. His legs have also been swollen, off and on, during this year.

Gets up twice at night to micturate.

For the past year he has had a cough.

Eight times during the year he has spit up two ounces of blood.

Examination. — Lips and mucous membranes and also the finger tips are cyanotic.

Heart: Apex 4 in. to left of sternum in sixth space, nearly in anterior axillary line. Right border 1⅝ in. outside sternum.

There is more substernal dullness up to the first rib than normal.

Considerable pulsation is visible over the precordia. At the apex there is a rumbling systolic murmur and a soft blowing diastolic; first sound is sharp; the murmurs are transmitted to the axilla with rapidly diminishing intensity.

At the base, systolic and diastolic murmurs are heard; both loud and nearly equal at the pulmonic area.

At the aortic area the second sound is the louder.

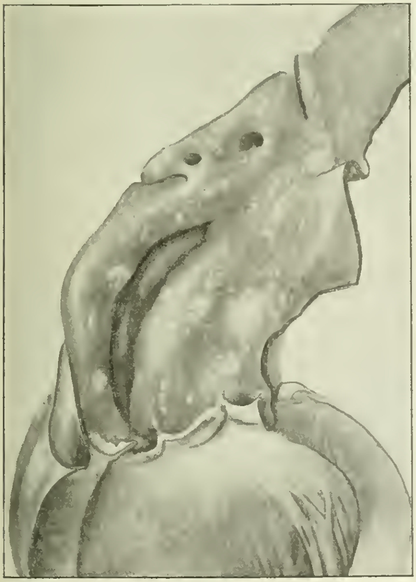
Pulses equal, water-hammer. Pulsations visible in the neck and arms; pulses of moderate tension; there is a suggestion of pistol shot in groins.

Liver edge could not be felt and the spleen was not palpable.

Knee jerks, not present on the right; present on left.

Plantar reflexes are normal.

Moderate soft edema of feet, and half way to knee.



Case VI.

The urine examination showed sp. gr. 1,025; acid; albumin, very slight trace or none. On one examination with a rare hyaline cast.

Cough gave the patient much distress. After a few days fluid appeared in scrotum; then the edema appeared in the face, that in scrotum disappearing.

Heart's action became irregular. The general condition was poor; heart beats came in pairs.

The patient sat in chair for relief from the dyspnea. Fell forward and died soon after.

Autopsy, 1,991. Old healed tuberculosis of bronchial lymphatic glands and right lung.

Heart: Weight, 710 gm. One section of the myocardium is fairly firm and rather pale. The left ventricle wall measures 1½ cm. and the right ventricle wall measures 4 mm. The columnæ carneæ are well marked in the right ventricle and thin and flat in the left ventricle.

Mitral valve: Circumference 10 cm. Valve not remarkable.

Aortic valve: Circumference, 7½ cm.

Tricuspid: Circumference, 11 cm.

The valve not remarkable. Pulmonic valve not remarkable.

Cavity of the left ventricle is greatly enlarged.

The cavity of the right ventricle not remarkable.

Coronary arteries, free and fairly smooth.

Aorta: The intima of the abdominal portion shows few small fibrous plaques. The thoracic portion and the arch and the first portion of the vessel are capacious and show scattered along the intima numerous smaller and larger fibrous plaques and areas of depression and roughening, some of which show a slight amount of calcareous change.

This condition is most marked in the first portion of the vessel and extends directly down and involves the cusps of the aortic valves. The process in the cusps is largely fibrinous, but in a few places there are small areas of calcareous degeneration. These arteriosclerotic changes greatly deform the cusps and fuse two of them together.

Other findings are not important.

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THE USE OF FRESH ANIMAL SERA IN HEMORRHAGIC CONDITIONS.*

BY TIMOTHY LEARY, M.D., BOSTON, MASS.

It is my purpose to present in this paper only a preliminary communication, dealing with the *practical* value of fresh animal sera in the treatment of hemorrhagic conditions.

It was early recognized by physiologists that the contact of blood with fresh serum or tissue juices hastened coagulation.

Alexander Schmidt in his classical experiments satisfied himself that during coagulation an excess of fibrin ferment was set free and was contained in the serum after separation of the clot. More recent experiments have demonstrated that coagulation is a more complex phenomenon than Schmidt found it, but the essential fact, that blood serum contains an agent which promotes coagulation, remains.

Kohler [1] in 1877 showed that the filtrate obtained after mincing a freshly formed clot, if injected intravenously, in quantity, into the animal from which the blood was originally drawn, would cause death from pulmonary thrombosis.

The practical application of these findings is due to the work of P. Emile Weil [2,7] who, while studying hemophilia, began the use of fresh animal sera injected either intravenously or subcutaneously, as a means of controlling or preventing hemorrhage. Weil's work brought out these facts: that the blood serum of horses, rabbits and beef creatures, as well as human serum, had the power of controlling hemorrhagic processes by increasing the coagulability of the blood; that beef serum was too toxic for ordinary use; that the serum used should be less than two weeks old; that a dose of 15 ccm. intravenously or of 30 ccm. subcutaneously would obtain results in most cases; that the use of serum locally at the point of hemorrhage favored clotting; that the increased coagulability of the blood persisted for a period of from fifteen days to several weeks. His studies in *hemophilia* satisfied him that in the hereditary type of the disease the results were at the best temporary, that repeated injections were necessary to control hemorrhages, that the massive type of visceral hemorrhages was controlled only imperfectly, that the greatest value of the treatment lay in the prophylactic injection of serum before operative procedures were practiced.

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* From the laboratories of pathology and bacteriology, Tufts College Medical School. Read at the meeting of The Massachusetts Medical Society, June 9, 1908.

The expenses of this work were borne in part by the Elizabeth Johnson Fund.

In sporadic hemophilia and acute purpura, on the other hand, the results were permanent, definite cures usually being obtained.

In chronic purpura and pernicious anemia the effect of injections was only transitory.

OTHER MEANS OF CONTROLLING HEMORRHAGE.

Salts of calcium have been used as a means of increasing the coagulability of the blood since the work of Arthus and Pages. Wright met with almost uniform success in the treatment of nine hemophilic families through the use of calcium salts, fibrin ferment and Co_2.

Robertson, Illman and Duncan,[9] using calcium salts in other hemorrhagic conditions, were unable to confirm Wright's results either with reference to the shortening of the coagulation time or controlling of hemorrhage.

CHOICE OF SERUM.

Weil recommends horse, rabbit or human serum.

We have made use of rabbit serum wholly in the series of cases to be detailed later.

Rabbits are easily obtained, are readily kept, are subject to fewer diseases than the horse and are particularly free from tetanus.

Some years ago, while working on antisera from a medico-legal standpoint, we found that it was possible to obtain aseptically by cardiac puncture large quantities of serum without seriously disturbing the animal. We have therefore made use of this procedure in obtaining fresh serum for use in hemorrhagic conditions. The chest is shaved over the sternum and left side. With an ordinary antitoxin needle a puncture is made to the left of the sternum and about 1 cm. above a line drawn transversely at the junction of sternum and xiphoid. The needle is thrust toward the middle line and slightly upward. The puncture usually penetrates the left ventricle. Blood to the amount of 30 ccm. is slowly withdrawn. With large animals a relatively long needle is essential. As ordinarily practiced the withdrawal of blood is followed by no evidence of disturbance on the part of the animal. At most a temporary weakness follows. Animals which have been bled are in condition to be bled again within a period of two to three weeks. If the needle penetrates the auricles or great vessels at the base, death ensues rapidly from hemopericardium, but this is a rare accident after the development of a satisfactory technic.

The blood is collected in sterile centrifuge tubes, into which have been poured 1 to 2 ccm. of fresh serum to favor clotting. After a short stay in the thermostat the clot is separated with a platinum needle and the material is shaken in a centrifuge (electrical, 1800 to 2,000 revolutions) for ten minutes. The serum is drawn off and is ready for use.

It is possible by following this technic to introduce the serum into a patient within two hours after its withdrawal from the vessels of the rabbit.

USE OF DIPHTHERIA ANTITOXIN.

Diphtheria antitoxin has had a limited use both here and abroad in the control of hemorrhage. Weil used freshly prepared antitoxin in his early work. The serum, however, should be less than two weeks old when used. Dr. Theobald Smith informs me that the diphtheria antitoxin furnished by the State Laboratory is from six weeks to six months old before it is delivered. The serum is kept at least six weeks in order that the animals from which it is obtained may be watched for evidence of disease, and notably for tetanus. The demand for antitoxin is largely limited to the winter months and it is the custom, for reasons of economy, to prepare serum during the summer months to help supply the enormous demand during the winter period.

I am informed that commercial anti-sera are subject to the same objections.

CHOICE OF METHODS.

Weil recommends the use of 15 ccm. of fresh serum intravenously or of 30 ccm. subcutaneously. The subcutaneous route is the more desirable, since the danger of hemolysis or thrombosis following injection into veins (although remote) is to be considered. We believe that the intravenous use should be limited to extreme cases, where *immediate* results are required, or where human serum is used.

That the dissolving of red cells (hemolysis) is not a serious or even a considerable danger following *subcutaneous* use is indicated by the following experiment.

Fresh rabbit serum is more markedly hemolytic for guinea pig red cells than for human red cells in the test tube. This we have demonstrated repeatedly. It is a reasonable presumption, then, that rabbit serum would give rise to more marked hemolysis in guinea pigs than in human beings. One cubic centimeter of rabbit serum was injected daily for ten days into a 750 gm. guinea pig whose red cells at the beginning of the experiment numbered 5,000,000 per cubic millimeter. Repeated counts made within a few hours after each injection showed no more variation than would ordinarily appear in repeated blood counts on the same individual (5,000,000 to 5,500,000). This dose (1 ccm.) of serum in a 750 gm. pig represents about six times the relative daily dose (15 ccm.) of rabbit serum which we have used subcutaneously in human beings. It would seem, then, that since these large doses of rabbit serum were incapable of invoking hemolysis in an animal more susceptible than man, the possibility of producing hemolysis in human beings may be ignored for practical purposes. It may be said here that in none of our cases did any evidence of hemolysis appear.

The toxic action of animal sera upon experimental animals has been the subject of much work. Beef serum is notably toxic in experimental animals, producing marked swellings at the point of injection, general malaise, rigors, fever and cyanosis, and in large doses leading to death. In human beings similarly toxic, though not fatal, results have been noticed.

Sheep and goat sera are also toxic for human beings, giving rise to local swellings of some moment. Horse serum and rabbit serum are but slightly toxic in this sense, being readily and rapidly absorbed without marked local reaction in most cases.

Serum sickness. — Following the use of horse serum in the form of diphtheria antitoxin there appears in a small percentage of cases the group of symptoms known as serum sickness. The symptoms are local edema, urticarias and arthralgias. This train of symptoms follows the first injection, appearing usually on the fourth or fifth day, or later, or may appear following a second series of injections.

Anaphylaxis. — More serious are the symptoms arising when a second injection, or series of injections, is made after an appreciable interval (ten days+) has elapsed since the first injection. Sudden dyspnea, cyanosis and death may ensue. This condition, rare in man, has been carefully studied in guinea pigs, in which animals the reaction is constant. It is believed to be due to an increased sensibility to the toxic principles of the foreign serum, due to a sensitization of the body cells by a substance present in the initial dose or doses. The process of sensitization is known as anaphylaxis, and Gay and Southard [15] believe it to be due to a specific substance present in the proteids of the foreign serum, which they call anaphylactin. It should be clearly kept in mind that this phenomenon is exhibited only when a second injection or series of injections follows the first at an interval of at least ten days. Repeated injections, without the interval of ten days, are unattended by danger.

Serious results of anaphylaxis in human beings appear very infrequently. Rosenau and Anderson were able to collect nineteen cases of sudden death from the literature, and state that they have personal knowledge of several more. In New York City it is estimated by Bolduan [16] that one death occurs in 25,000 persons injected. In this city, at the Children's Hospital, it is the custom, as indeed it is elsewhere, to repeat a prophylactic dose of diphtheria antitoxin every three weeks (an ideal time for the exhibition of anaphylaxis) during the stay of a child in the hospital, and no bad results have occurred. Maragliano's serum for tuberculosis is used at considerable intervals and no bad results are reported.

It has been claimed (Otto) that anaphylaxis more frequently followed the use of fresh than of old serum. Rosenau and Anderson (unpublished communication, American Association Pathologists and Bacteriologists, 1908) find no difference in the reaction to fresh or old sera. The anaphylactic agent is a stable body which does not change as the serum ages.

From our standpoint the danger of anaphylaxis is slight, since in most cases the serum is used at only one time, i. e., during the period of hemorrhage. In cases where the hemorrhages are repeated it is necessary to repeat the injection, and here the possibility of anaphylaxis must be met. In one such case associated with menstruation we supplied for the second injection guinea pig serum. This case has since had a transfusion and is at present well, in the interval between the menstrual periods.

We have had no evidence of toxic action other than one case of urticaria in our series.

CASES.

We have furnished serum for 20 cases, in 15 of which hemorrhages had already appeared. In the remaining 5 it was used as a prophylactic agent.

A. *Jaundice.*

In the surgical clinics at the Carney Hospital (services of Drs. Munro and Bottomley) eight cases have received injections of rabbit serum. I am indebted to Dr. S. W. Goddard for the histories. The first case, in which the serum was exhibited only after hemorrhage had been going on for some hours, illustrates the rapidly fatal type of cholemic hemorrhage, which led William Mayo to say that no case of cholemic purpura had ever been successfully operated upon.

I. L. P., forty-eight years of age, had a stricture of the common duct following cholecystectomy five months ago. Had been jaundiced three months, with clay-colored stools. Operation, hepatico-duodenostomy, was followed by internal hemorrhage and hemorrhage from wound. Fifteen ccm. of rabbit serum was introduced subcutaneously twenty-four hours later, when there had been tangible evidence of internal hemorrhage for ten hours, and patient was sinking rapidly. Death from hemorrhage five hours after the first dose of serum.

If we were dealing with this case to-day I think that we could save it. The serum would have been used earlier and in larger dose, and a gauze packing soaked in serum would have been introduced locally.

The other cases in this series received 30 ccm. of rabbit serum subcutaneously from twenty-four to seventy-two hours before operation, *as a prophylactic measure.*

II. A. R., female, forty-nine. Chronic Pancreatitis with Stricture of Hepatic Ducts. Has had fleeting jaundice following attacks, which began seventeen months ago. Jaundice *with purpura* for past week. Operation (choledochostomy) was followed by no bleeding. Purpura rapidly cleared up.

III. C. F., female, fifty-three. Gallstones. Deep jaundice *with purpura*, persisting for three and one-half months. Operation (choledochostomy) followed by no bleeding.

IV. E. J., thirty, female. Gallstones. Symptoms for one year. Five to six attacks. Jaundice deep for two weeks, with clay-colored stools. Operation (cholecystostomy, choledochostomy) was followed by slight bleeding from wound four days later; 15 ccm. of serum was injected. The seventh day the discharge of bile from the fistula ceased and more blood appeared. The eighth day a spurting vessel was found in the wound which had given rise to much hemorrhage. This was tied. From this time there was little or no bleeding. Death ensued on the eleventh day from cholemia. In this case the cholemia was re-established, probably through inflammatory obliteration of the duct, and death ensued from this cause. The inability of any agency to permanently control cholemic hemorrhage, unless the cause is removed, is illustrated by this case.

V. N. M., forty-five, female. Gallstones. Chronic Pancreatitis. Symptoms of gallstones for two years. Jaundice persistent for nearly two years. At present deep jaundice, no purpura. Operation (cholecystostomy, choledochostomy) followed by no hemorrhage.

VI. E. W., forty-nine, male. Gallstones. Cholecystitis. Four typical gallstone attacks, with several milder seizures during past two years. Some with jaundice, which was mild and not permanent. Last attack five days ago, with jaundice (mild). Operation (cholecystostomy) followed by no hemorrhage.

VII. H. K., sixty-five, female. Gallstones with Atrophy of Gall Bladder. Acute attack, with jaundice for three days. Two large stones found in common duct. Operation (choledochostomy with cholecystectomy) followed by no hemorrhage.

VIII. E. K., thirty-nine, female. Cancer of Gall Bladder and Liver. Moderate jaundice for two months, no purpura. Operation (exploratory) followed by no bleeding.

IX. Drs. William G. Bolles and William H. Robey, Jr. History by Dr. Robey.

N. M. G., thirty-four, female. Always in good health. One year ago, while in Vermont, an attack of epigastric pain with vomiting, no jaundice, lasting about three weeks. Middle of February, second attack without jaundice. Never well since. More violent attack about March 15. Operation March 30, 1908, one large gallstone completely closing common duct. One week later secondary hemorrhage. Packing wound with gauze wet with adrenalin, and injecting adrenalin into wound through drainage tube, failed to stop hemorrhage. Patient very sick with gradually rising pulse. Jaundice, which came on about ten days before operation, very marked. Epistaxis and small hemorrhages into skin in various parts of the body. April 11 gave 15 ccm. rabbit serum. Bleeding less the following day, when 15 ccm. more were given. After April 12 there was gradual improvement, and although there was slight oozing from the wound for a few days, there was no further evidence of serious hemorrhage.

Five days after the second injection there were signs of probable infarct in left lung, and a few days later an effusion in left pleura, which cleared without trouble.

B. Hemorrhage of the New-Born.

X. Boston Lying-in Hospital. History by Dr. Gilpatrick.

Baby McC., born March 8, 1908. Birth weight, 7 lb. Female. Normal delivery. Two previous children healthy. Mother's convalescence uneventful. Baby normal at birth. Nothing remarkable noted until twenty-three hours after birth, when baby vomited dark-brown material. Several hours later a stool was noted to be bloody. On the hard palate two small hemorrhagic spots were noted and two areas of subcutaneous hemorrhage were seen on the right lower leg. Temperature at this time normal. Baby nursing well. March 10, temperature normal in morning. On right cheek is a hemorrhagic area and the spots on the hard palate bleed freely at times. No vomiting during the day. Temperature in evening 100°. Vomited fresh blood and coffee-grounds material. Stools bloody. Hemorrhagic area on cheek now about 3 in. in diameter. Considerable fresh bleeding from cheek. Baby took milk well all day.

March 11. Condition in morning about as yesterday. Temperature normal. One dose of rabbit serum (7½ ccm.) given at 3 p.m., and another at 11 p.m. Bleeding from cheek and mouth continued during day, but no vomiting was noted. Stools tarry.

March 12. Temperature 101° in morning. Vomited bloody material. Some bleeding from cheek. None from mouth. No vomiting during the last part of the day. Temperature in evening 102.2°.

March 13. Temperature, 102°. No further bleeding from cheek or mouth. Spot on palate not so noticeable. One dose of serum (7½ ccm.) in morning and one in afternoon. Stools green in afternoon. No vomiting now for thirty-six hours. Takes nourishment well.

March 14. Temperature normal. Area on cheek crusted over. Spots on palate and leg fading. Baby apparently doing well.

March 23. Baby continued to do well; discharged to-day, weight 5 lb. 13 oz.

XI. History by Dr. John J. Mitchell, whose case it was.

"In reporting this case I shall preface it with a rather crude report on the sister of the baby who had same symptoms and died. The first report is from memory."

M. D., born May 11, 1907, died May 15, 1907.

Family history. — The father states that he had a brother who bled profusely with the slightest cut. Nothing more concerning him could be learned. Family history negative in other respects.

Patient was born at 10 p.m., May 11, 1907, after difficult version (the mother having a justo-minor pelvis) and was resuscitated with great difficulty.

May 13. Nurse reports small amount of mucus and blood flowing from mouth, saying that it began late the night before (May 12), also calls my attention to a black and blue spot in center of right cheek. The spot is surrounded by a moderate amount of infiltration. In the evening of same day infiltration much increased, spot now about as large as a dime, and cheek tumor about the size of a pigeon's egg.

May 14. New black and blue spots have appeared, viz., one on each ankle as large as five-cent pieces. Two upon back in scapular region and one on back of the neck. A peculiar hoarse metallic cry came from infant. It cannot take nourishment. In the evening the baby becomes stupid, pulse becomes very rapid (I don't remember rate) and respiration shallow and irregular.

May 15. Called at 8 a.m. to see baby. Tumor on right cheek as large as pullet's egg. Numerous punctate lilac spots over forehead, and less marked over rest of body. Respiration of Cheyne-Stokes type. Died at 10.30 a.m. No oozing at any time from umbilicus, but if my memory serves me well I think there was hematuria a few hours before death. No blood noticed in stools. No autopsy.

Baby D. No. 2.

May 5, 1908. Born at 7.30 A.M., delivered by intermediate forceps.

May 7, 1908. Ecchymotic spot size of a dime on right cheek in almost exact locality as in M. D. While giving the morning bath, nurse found a spot in right groin about as large as a pin point, from which blood was oozing freely. After most careful inquiry could not get evidence of an injury to groin.

At 7 P.M. patient was injected with one tube (7½ ccm.) of rabbit serum.

At 10.30 P.M. left cheek commenced to swell; at 2 A.M. it had reached its height, and at 4 A.M. it had subsided, leaving a pale ecchymotic spot about as large as a dime.

May 8. Oozing in groin now completely stopped. No new spots.

May 9. At 10 P.M. a spot as large as the others developed at back of neck, and accompanied by moderate amount of infiltration.

May 10, 10 A.M. Patient given another injection of rabbit serum.

May 11. No new spots. All old ones gradually disappearing.

From this time on recovery uneventful.

May 28. Have heard through baby's aunt that she is doing nicely.

XII. St. Mary's Infant Asylum. Service of Dr. Walton. History through Dr. Cahill.

Child four days old. Had been bleeding from the rectum, stomach, nose and gums, as well as umbilical stump. There was also consolidation of whole back of left lung, which at autopsy was found to be due to diffuse hemorrhage. Child had been bleeding for *two days* before exhibition of first dose (15 ccm.) of serum. Death followed within thirty-six hours.

C. *Hemophilia.*

XIII. Dr. William D. Swan, Cambridge. History through Dr. Coggswell.

"R. V. E., present age, twelve years, six months. Had measles and scarlet fever in early childhood. At nine and one-half years had her first attack of purpura simplex, characterized by bruised areas, petechiæ and nosebleeds, the latter frequent and severe. This condition continued, with intermissions, until January, 1907 (when she was eleven years old). At this time had been growing very fast and was tall for her age. In January she had an attack of diphtheria, for which she was treated by antitoxin (from 3,000 to 5,000 units). Recovery was uneventful. The nosebleeds ceased, the patient continued to have large and sometimes painful and tender ecchymoses and petechiæ.

"In January, 1908 (patient then twelve years), occurred the first menstruation. Hemorrhage with blood casts of the uterus (normal shape) for three weeks; patient very anemic. Seen by Dr. Edward Reynolds. Recovery slow, at the end of seven-weeks' trip to Washington, from which place she returned in March, looking well and rosy.

"Second menstruation nine weeks from the first. Continued normal for four days, when it became hemorrhagic. At this time 15 ccm. rabbit serum from two syringes was hypodermically administered. Blood oozed from the needle punctures for one-half hour. Forty-eight hours later this dose of rabbit serum was repeated. These punctures did not bleed, and the hemorrhage ceased in a few days.

"The April menstruation was of the same character; 30 ccm. guinea pig's serum was given; the hemorrhage ceased gradually, as the last time.

"The May menstruation went on normally for four days, then almost ceased for one day, then became hemorrhagic; this time she had severe nosebleed, the first she had had for over a year. At the end of ten days the skin was waxy, lips pale, pulse 100 to 110, difficulty in taking food.

"On May 24, operation by Dr. J. C. Mumford: direct transfusion of blood, the donor being a perfectly healthy young man, and distant relative. The hemorrhage, which was watery red serum, ceased the following day. Patient looked brighter and took food well. After three days temperature began to rise, reaching 104°, and gradually subsided without any local manifestations. The wound healed. The patient is now regaining health rapidly.

"Two blood examinations were made by Dr. R. E. Andrews, in February and March. The first time the coagulation time was thirteen minutes, the second six minutes."

In this case if hemorrhage recurs I shall recommend that human serum, obtained by tapping the median vein, be used in lieu of further transfusion or animal serum.

D. *Purpura.*

XIV. Boston City Hospital. Dr. Ralph C. Larrabee.

"Boy of thirteen. In December last was in bed two weeks with a sore throat. No doctor was called, but boy said that he had diphtheria. In January purpuric spots began to appear on skin and continued with mild rheumatic symptoms up to March 1, when he was seen. Fifteen cubic centimeters of rabbit serum was injected subcutaneously, and was followed by a disappearance of rheumatic symptoms and a cessation of purpura. The rheumatism never returned. On the fourth day he had a serum urticaria, with wheals covering the body. Over the lower part of the body these were hemorrhagic. There later developed a giant urticaria, which showed hemorrhagic centers over legs. One week later urticaria cleared up, and in two weeks patient was discharged from hospital much improved, with few purpuric foci."

In this case, through a misunderstanding, only one dose (15 ccm.) of serum was used. It furnished the only example of urticaria which appeared in the series. The condition of the boy, even when the urticaria was present in most startling form, was good.

E. *Post-Operative.*

XV. History by Dr. W. H. Robey. Operation by Dr. Philip Hammond.

"Removal of portion of middle and lower turbinates with submucus resection of septum. Marked hemorrhage at time of operation and for following twenty-four hours. The second and third days, hemorrhage slight. On the fourth day three smart hemorrhages controlled by adrenalin. Fifth day, some blood. Sixth and seventh days no hemorrhage. Eighth day, marked hemorrhages at 10 and 5 A.M. Fifteen cubic centimeters rabbit serum subcutaneously. On the ninth day a considerable hemorrhage at 5 P.M., which was followed by the use of a second dose of rabbit serum, 15 ccm. From this time (eleven days) no further hemorrhages appeared."

XVI. History by Dr. F. C. Cotton, whose case it was.

"Infant S., eight days old. Ritual circumcision March 7, 1908, A.M. Seen by dispensary doctors in afternoon on account of bleeding. Applied adrenalin, pressure, etc. Bleeding continued. There was a steady ooze from the cut skin and *also* from the mucous membrane of the glans penis, where there had been pressure from dressings. A running suture around prepuce controlled bleeding in part for a time, but did not do much. There seemed to be *no* bleeding from stitch holes. Then I applied actual cautery at black heat. This worked better, and for some time bleeding ceased, and at about 2.30 I left him oozing only a little.

"Next noon injected rabbit's serum, 3 ccm. At this time pulse still perceptible, but color not good. The bleeding had continued gently, unchecked by adrenalin applied by Dr. Sandler according to my directions. Up to this time there was no sign of coagulation on the wound except from the cautery, and none on the dressings.

"At 3 p.m., 2½ ccm. more injected. The bleeding ceased for a time, but recurred. Five cubic centimeters in two portions injected next morning by Sandler, and next day there was some slow clotting, but the case had evidently gone too far and died the evening of March 9, 1908.

"This seemed undoubtedly a hemophilia, but the history was poor. An uncle had died shortly after birth of umbilical bleeding, and a cousin, female, had had severe hemorrhages from tooth extraction. They thought there was some one else, but excitement and language prevented better history."

This was one of the first cases treated and the serum was used too late and in too small quantity.

F. Uterine Hemorrhage.

XVII. Drs. C. O. Thompson and E. S. Bisbee. History by Dr. Bisbee.

Mrs. H., forty-five. Two adult children and one miscarriage at six months some years ago. For several years has had marked menorrhagia. About Feb. 1 began flowing every two weeks. April 1 flow became continuous and was profuse, with bright red blood and practically no clots. Patient grew progressively weaker. Condition became serious within two weeks.

Patient first seen April 15; was at this time too weak to withstand operation. Vaginal packing gave some relief. Patient's condition improved so that curettage was practiced April 27. A large amount of curettings was obtained, which were examined by Dr. L. S. Medalia and showed moderate glandular hyperplasia. There was no hemorrhage for three weeks, when bleeding was renewed. Patient has been flowing continuously for past three weeks. Vaginal packing with gauze gave little relief. Tight packing with non-absorbent cotton, soaked with ferrous sulphate, gave some relief, but hemorrhages still continued. Ergot, aromatic sulphuric acid, fluid extract of hydrastis and adrenalin have been used at different times without avail.

June 16. Fifteen cubic centimeters of rabbit serum were given subcutaneously and a gauze packing saturated with rabbit serum was introduced into uterus. Vagina packed with non-absorbent cotton.

June 17. Behind the packing was found about 4 oz. of thick, dark, tarry blood, with few small clots. Fifteen cubic centimeters of rabbit serum subcutaneously. Vaginal packing reintroduced.

June 18. Less blood of same consistency found behind packing. Vaginal packing reintroduced.

June 19. No blood was found; packing omitted. Color, pulse and general condition better.

G. Typhoid Hemorrhage.

XVII. History by Dr. John E. Somers, Cambridge, whose case it was.

J. D., age forty-three, typhoid fever. On the sixteenth day of the disease (April 26) a number of hemorrhages from the bowel occurred, aggregating 16 oz. (estimated). April 27, 15 ccm. serum injected. From time of first injection, hemorrhage, for the balance of the twenty-four hours till next injection, grew markedly less. April 28 injected 15 ccm. He still continued to lose blood, but in very much diminished amount. April 30 injected 15 ccm. From this time forward the bleeding practically ceased, for while the dejections were somewhat discolored, no appreciable amount of blood was lost.

XVIII. Cambridge Hospital. Service, Dr. E. A. Darling. History through Dr. Paine.

E. M., female, forty-five. Had been caring for son and daughter with typhoid. For past two weeks has had headache, malaise and diarrhea. Entered May 18. In poor condition on entrance and grew progressively worse. At entrance dark brown stools, which gave guaiac test. On dangerous list May 24. Hemorrhages May 31, 8.45 p.m., 10 to 14 oz. of fresh blood. A second hemorrhage at 2 a.m., June 1; patient in profound shock; respiration sighing; pulse barely perceptible. Dr. Darling looked upon the case as very desperate and thought her chances of recovery were very slight. Dr. George P. Coggswell, who saw the case with Dr. Darling, thought the outlook hopeless.

Seven and one-half cubic centimeters rabbit serum at 12.45 p.m.; 7½ ccm. rabbit serum at 6.55 p.m.

A further hemorrhage at 8.55 p.m., and a small one at 10 p.m. June 2, 7½ ccm. serum at 7.10 a.m., 7½ ccm. serum at 12.15 p.m. A small amount of blood was passed at 12.45 p.m. (See Chart A.)

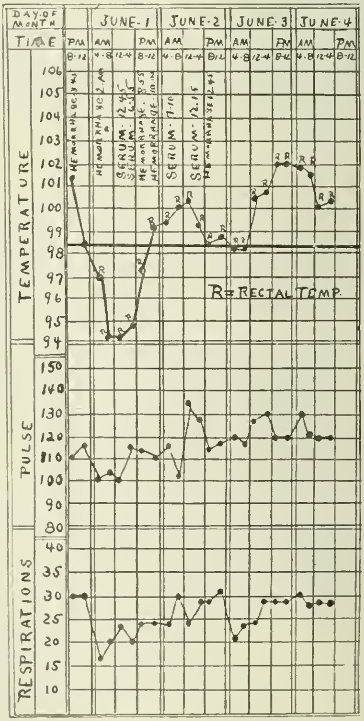

Chart A.

Since this time there have been no hemorrhages and the progress of the case is satisfactory. Prognosis now good.

This case illustrates not only the apparent value of fresh serum in controlling hemorrhage, but also its remarkable stimulant effect. I have found in the literature no specific references to the value of fresh serum as a cardiac stimulant. Some months ago, while treating a case of streptococcus meningitis in which ordinary stimulants began to fail, it was demonstrated that fresh serum given in divided doses was a circulatory stimulant capable of continuing life for considerable periods.

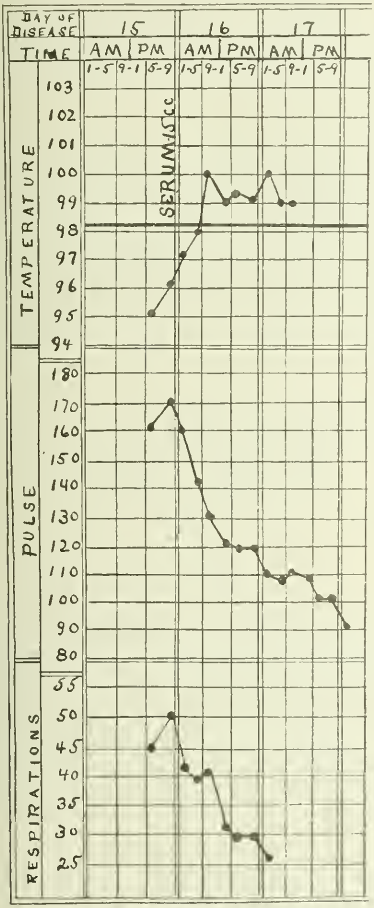

Chart B.

This experience we have repeated so frequently that we are led to the conclusion that fresh animal serum is an extremely valuable cardiac stimulant. It will have no influence on the cause of the shock, if this be an infecting agent, but it will aid in tiding over emergencies and permit the use of other measures in controlling the infection. It is our intention to obtain experimental data upon this point.

The possible value of serum as a substitute for transfusion is suggested by the following case from the Boston City Hospital, service of Dr. L. S. Friedman, history by Dr. Callender.

S. F. Admitted Feb. 15, 1908. Immediate laparotomy. Patient practically pulseless. Twin tubal pregnancy in left tube. Abdomen full of blood. Resection of left tube. Abdomen cleansed of blood and closed. Patient pulseless at end of operation. A slight rally followed, but pulse was weak and rapid until after injection of 15 ccm. rabbit serum, when pulse improved rapidly in volume and tension and the patient began to show marked improvement, going on to an uninterrupted recovery. (See Chart B.)

The simplicity of the procedure, which from the clinical standpoint consists merely in the subcutaneous injection of serum, commends it in emergencies, where the delay and technical difficulties of a transfusion and the danger of hemolysis make the latter a debatable measure. It will of course not replace transfusion where there is actual need for blood.

We are drawing no conclusion as to the value of fresh serum in controlling hemorrhage. The series of cases is too small. Weil's results, together with our own, suggest, however, that in this property of serum we have an efficient addition to present methods. We plead for a wider use of the agent.

In emergencies the physician who is not in touch with the laboratory can obtain blood from the jugular of the horse (tetanus the only serious danger) or from the median vein in man.

We desire opportunities to study further the clinical action of fresh serum. With this in view, there will be kept at the laboratory a supply of fresh serum which can be obtained immediately in emergencies.

To Dr. Lawrence W. Strong I am deeply indebted for assistance and suggestions.

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A TYPHOID CARRIER FIFTY-TWO YEARS AFTER RECOVERY.

BY DONALD GREGG, M.D.

(From the Laboratory of Hygiene of the Harvard Medical School.)

BETWEEN July, 1905, and April, 1908, there occurred among the inmates of a small boarding-house in a farming town in Middlesex County, 7 cases of typhoid fever, distributed as follows: August, 1905, Mr. H. and Mr. W. L.; later in the same year, Mr. C. L. and Mr. B.; September, 1906, Mr. G.; November, 1907, Miss P.; March, 1908, Miss M. The fact that practically all of the cases of typhoid fever that occurred in the town during this period were in the same house, came to the knowledge of Dr. Charles Harrington, who requested me to proceed to make an investigation of the matter, and particularly to ascertain whether the same person had been continuously employed preparing the meals and if so, and she had a typhoid history, to secure specimens of her urine and feces for examination.

Inquiry revealed the following facts: The keeper of the boarding-house was born in the town seventy-four years ago. In the autumn of 1856, there was there and in adjacent towns an outbreak of typhoid fever, and she and her mother and sisters were among the victims. Since that time she has been in good health, excepting that she has had at times considerable diarrhea and also occasional sick headaches. She has had no attacks of jaundice and no abdominal pain in the region of the gall bladder, and at no time has she had any fever or illness suggestive of a second attack of typhoid fever.

In 1862 she married, and after a time she began to take a few boarders. Her husband died in 1902 of phthisis. Neither he nor any of the boarders had ever been seized with typhoid fever. After his death she continued to take boarders and lodgers, and did all of the housework and cooking, without employing a servant.

The first two cases of typhoid fever occurred in August, 1905, when no others were known to exist in the neighborhood. When the two later cases occurred, the only other boarders were two elderly ladies, who escaped infection. In 1906, when the fifth case appeared, there were no other cases in the town or neighborhood. Of the other boarders, who included Mr. W. L., who was sick the year before, none was seized. The victim in November, 1907, had boarded in the house three or four months before she was infected. The other three boarders escaped. Her position as school-teacher was given to another, who succeeded her as a boarder also, and in about two months as a typhoid victim

When the house was visited it was found to be very neat in all particulars. The water supply was good, and as there were no other cases in town, the milk supply could not have been at fault. The only constant factor for the 7 cases was the woman who had prepared all the food of the persons seized.

A specimen of her blood gave a negative Widal test. The urine contained no bacilli. The feces planted on a von Drigalski-Conradi agar plate yielded many colonies, which had the appearance of typhoid colonies. One of these was transferred to bouillon, and from the pure culture thus obtained transplants were made to various media for further study. The organism proved to be an actively mobile bacillus. It neither coagulates nor acidifies milk; it forms no gas in glucose agar; it does not liquefy gelatin; it forms no indol. With serum from a rabbit immunized to typhoid it gives a positive Widal reaction at 1 to 100, in less than an hour, but with that of another immunized to the colon bacillus it gives no reaction. With the serum of a patient ill with typhoid fever at the Massachusetts General Hospital, it gave a positive Widal reaction at 1 to 50. Thus, it responds to all the tests like the typical typhoid bacillus.

Specimens of urine and feces obtained two weeks after the first were examined gave the same results: the urine was negative and the feces yielded the typhoid organisms in abundance.

Evidence cannot be adduced to prove that the 7 cases had a common origin; but that they did, seems highly probable. Similarly, it cannot be proved that the housekeeper has been excreting typhoid bacilli for fifty-two years, but in the absence of any history of a second infection, one must conclude that she is entitled to the distinction of having established a new record for typhoid carriers.

OBLITERATING ENDARTERITIS: TYPES AND THEIR SURGICAL IMPORTANCE.

BY CHARLES P. PAINTER, M.D.,

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(Concluded from No. 2, p. 40.)

V. ARTERIOSCLEROSIS. SYPHILIS. SENILE GANGRENE. CASES 9 AND 10.

UNDER this head may be grouped cases in which there are obvious lesions of the vessel walls or positive evidences of syphilis in the past history, or senility measured not only by "length of days," but by the hardening of arteries and elevation of blood pressure. Russell,[28] in discussing the causes of arteriosclerosis, cites Thoma's views. The latter believed that a hypertonus of the vessels led to a dilatation of the walls, hypertrophy of the muscular coat and thickening of the intima. The thickening of the walls was a necessary consequence of the hypertonus and dilatation, in order that the rate of flow might be kept up and a normal quantity of blood might be steadily delivered. Russell agreed with Thoma as to the method by which the observed arterial changes were brought about, but thought that behind it all there must be some other explanation and this he believed would be found in the occurrence of toxic material circulating in the serum and causing an irritation of the intima and media.

Virchow, in discussing Haga's paper, "Ueber spontane Gangran,"[17] raised the question of the syphilitic origin of the lesions which Haga had demonstrated in some of his specimens and referred to his own work on this subject previously reported in the *Archives.* (Virchow's.)

Case I. E. B. C. Male. Sixty-two years. No. 2,153. Sept. 12, 1904.

Complaint. — Pain in right leg.

Diagnosis. — Angina cruris.

Duration. — Three years.

Cause. — Unknown. No injury and no sickness.

The present trouble commenced with pricking sensations in the feet. This gradually disappeared, leaving a sensation of great fatigue in the right foot when he walks any distance. The greatest difficulty he has experienced is in rising on his toes. After walking a short distance he has a cramp-like sensation in the right calf, which gradually increases until he stops walking, when the cramp slowly subsides and finally wholly disappears. He has been obliged to give up nearly all forms of exercise on account of this trouble. Has been under treatment for rheumatic gout.

Physical examination. — Right foot colder to touch than the left. Pulsation in dorsalis pedis arteries not felt in either leg. Both longitudinal arches flattened. Right anterior arch is considerably depressed and there is a callus beneath. Left anterior arch not so flat. Is wearing plates for the longitudinal arch. No muscular spasm in the foot muscles. No sensitiveness in the calves and no swelling to be palpated. Pulse is full and bounding, suggesting the high tension pulse of atheroma.

To have vibratory massage and "Thomas" lifts on his heels.

A little later Dr. H. L. Taylor, of New York, reports that there is no pulsation in either dorsalis pedis artery and that some tenderness was detected over the femoral artery in the groin and at one point in the calf. The vibrator was applied over the calf, along the sciatic nerve and over the femoral artery.

After some five or six applications there was no appreciable improvement.

Case II. J. P. Male. Fifty-two years. No. 469. July 28, 1903.

Complaint. — Pain in left leg.

Diagnosis. — Angina cruris.

Duration. — Several months.

Cause. — Unknown.

Pain comes on only when walking; starts in the left instep and extends up to the thigh; is intermittent in character. Has not been able to walk any considerable distance without stopping to rest. After this the pain disappears. Of late the pain has been increasing and now he finds it impossible to walk as far as a hundred yards without resting.

Physical examination. — Large, powerfully built man. Motions of the spine, hips and knees normal. Left foot pronated and anterior arch is quite relaxed. No rigidity of the foot. No pulsation in left dorsalis pedis artery.

Was fitted with an anterior arch plate and given a course of treatment with the vibrator.

Has a vibrator, which he finds it necessary to use in order to keep the tendency to cramp under control.

Case III. O. P. Female. Sixty-nine years. No. 4,257. June 4, 1906.

Complaint. — Pain in calves of both legs.

Diagnosis. — Angina cruris.

Duration. — Twenty-three years.

Cause. — Unknown. (Diabetes and atheroma.)

For a number of years patient has been unable to walk any considerable distance without severe pain in the calves of the legs. Never has this trouble at night or when recumbent. Is troubled somewhat by bunions and aching in the cords at the back of the legs and in the lower part of the spine.

Physical examination. — Pain is referred to calves of legs, but there is no tenderness or swelling to be detected here. Moderate grade of hallux valgus. Both feet are moderately flat. Horizontal leg raising increases the pain in the legs. No pulsation in dorsalis pedis vessels.

Treatment. — Plates were fitted to relieve foot strain. General treatment planned for arteriosclerosis by her family physician. Plates and local treatment had no beneficial effects during the four months they were tried.

Case IV. A. F. Male. Jew. Thirty-eight years. No. 4,812. Dec. 16, 1906.

Complaint. — Pain in anterior portion of right foot.

Diagnosis. — Erythromelalgia.

Duration. — Three years.

Cause. — Unknown.

First noticed pain beneath the ball of the right foot. This has continued to grow worse ever since. Ten months ago all the toes on the right foot became numb, and in the past two or three months the great toe (right) has become extremely painful. For a short time during the past summer the severe pain in the toe disappeared, but not in the foot itself. The left foot has caused him no trouble. The toes have been reddened most of the time for several months. Smokes to excess; uses alcohol moderately. Had gonorrhea seven years ago; never had chancre. Lost thirty pounds in weight in three months. This he attributes to pain and loss of sleep.

Physical examination. — Well-developed and fairly nourished man. All the toes on the right foot are bright red in color, and this discoloration extends up over the dorsum of the foot to a point opposite the mediotarsal joints. Toes are cool to the touch and very painful, especially the great and little toes. No pulsation in the dorsalis pedis or posterior tibial arteries. Over the outer and dorsal surface of the right little toe is an ulcer which is very sloughy, quite deep and has shown no tendency to heal over, in spite of persistent treatment. This ulcer followed the extraction of a supposedly ingrowing nail.

Treatment. — He was seen in consultation by a neurologist, who sent the patient to the Massachusetts General Hospital to the neurological ward, where he was under observation for six weeks. The leg was elevated and every kind of local treatment was tried which offered any hope of relief. Heat, cold, passive congestion, bandaging and various drugs were used. All this was to no purpose. Cold gave the most comfort, but the patient slept very little, and at the end of this period he was quite willing to sacrifice the leg.

Dec. 7, 1906. The right leg was amputated at the "point of election." The vessels of the anterior tibial group at the height of the ankle were occluded almost completely by a proliferating endarteritis. The same condition was noticed in the posterior tibial and some of its larger branches. These groups of vessels were dissected out for histological study.

May 7, 1907. Patient has made a perfect recovery. No development of symptoms in the left foot or recurrence in stump.

Dec. 9, 1907. Patient has been wearing a wooden leg for three months and walks without discomfort and without cane or crutch. No recurrence of trouble in the stump or in his other extremities.

April 22, 1908. Since the last visit a small ulcer developed over the inner end of the scar. The patient attributed this to a readjustment of his artificial leg which he had found necessary. It has not healed, in spite of the omission of the artificial limb and careful attention to the dressing of the ulcer. The margins of the ulcer show a thin black border; the base is not deep and is covered with a purulent exudate. With the establishment of this ulcer there has been great pain, almost as severe as that which he had before the amputation. There is pulsation in the vessels above the knee wherever they come near enough the surface to be palpated.

Pathological report. (Fig. 1. See No. 2, p. 37.) The anterior and posterior tibial vessels were dissected from the foot after amputation, and at the level of the dorsalis pedis portion of the anterior tibial the lumen was so small as to be scarcely perceptible and great difficulty was experienced in inserting a bristle from a brush. The accompanying microphotograph was made from sections of this vessel at this level and show moderate hypertrophy of the muscular coats, but the more essential change is shown in the tissue with blood spaces scattered through it, some of which seem to be taking on the character of vessels. The accompanying nutrient vessels show thickening of the walls, but much less occlusion of the lumen.

In only one place does the elastic coat of the intima seem to be broken in this specimen, and where it is the mass in the interior of the vessels seems to project into the muscular coats and the media. The entire picture suggests a filling up of the caliber of the vessel by a granulation tissue, in the substance of which are good-sized rudimentary blood spaces. It certainly does not suggest an arteriosclerotic condition of the common type.

Case V. E. S. Female. Sixty-four years. No. 1,947. July 14, 1904.

Complaint. — Pain in feet and legs.

Diagnosis. — Angina cruris. Erythromelalgia.

Duration. — Six months.

Cause. — Diabetes. Atheroma.

In recent years she has been quite well. Several years ago she had a transient attack of diabetes. At that time she had a severe attack of angina pectoris. She has not been much troubled by this in recent years. During the past winter she has been unable to go out because of great pain in walking. This pain was referred to the calf of the right leg particularly. During the cold weather she was much troubled by cramps in the leg, especially at night. There is some slight swelling of both legs all the time.

Physical examination. — Heavy, flabby woman. Sallow color. Slight edema of the legs. On the right foot peripherally to the juncture of the phalanges and the metatarsals the skin is a bright red color; the blood immediately returns after being squeezed out. Pulsation absent in the dorsalis pedis vessels.

Patient was seen in consultation with a neurologist, who reported some improvement under massage, diet, etc. He was not willing to ascribe a name to the symptom-complex, but thought that the arterial condition was doubtless responsible for the trouble.

Case VI. H. R. Male. Fifty-five years. No. 3,227. June 30, 1905.

Complaint. — Pain in right foot.

Diagnosis. — Erythromelalgia.

Duration. — Eighteen months.

Cause. — Atheroma.

For a year and a half has been troubled very much by pain and a very disagreeable burning sensation in the anterior portion of the right foot and to a slight degree in the left foot. Has been rheumatic to some extent and has been told he was "full of uric acid."

Physical examination. — Plethoric, well-nourished man. General arteriosclerosis of a mild grade. Very prominent superficial veins. Feet show very marked passive congestion in the anterior portions. No valgus. Pulsation in both dorsalis pedis vessels. Patient was referred to his local physician in New York for treatment and has not been seen since.

Case VII. E. S. L. Male. Fifty-five years. No. 3,196. June 30, 1905.

Complaint. — Pain in foot.

Diognosis. — Erythromelalgia.

Duration. — Six months.

Cause. — Unknown.

The present trouble commenced shortly after the patient pared a corn. He attributed the redness which he noticed soon after to an infection. The entire front part of the foot became red and congested. This congestion was greatly increased by hanging the foot down.

The skin of the sole of the foot is lacking in fat and there are callus formations beneath the anterior arch. Foot is very sensitive to touch, over the toes particularly, and is colder than the other foot. No peripheral congestion in the hands or other foot. Pulsation not present in the dorsalis pedis of either foot. No general arteriosclerosis. No history of lues.

Two months later a small ulcer appeared over the skin of the affected side. He was seen by a neurologist, who regarded the trouble as vasomotor, and under his direction the patient had massage for six weeks or more. The condition became worse and the patient consulted a surgeon, at which time he had a perforating ulcer on the sole of the foot. He declined amputation.

The subsequent history of the case has been obtained through his family.

In June, 1907, redness and pain developed in the other foot, beginning in the great toe. His suffering was intense until his death from gangrene, July 11, 1907.

Case VIII. J. C. Male. Sixty-eight years. No. 4,965. Jan. 30, 1907.

Complaint. — Pain in calves on walking.

Diagnosis. — Angina cruris.

Duration. — One and one-half years.

Cause. — Arteriosclerosis.

Patient works on a machine used in the manufacture of shoes. He remains standing all day. While he is thus engaged he has no discomfort in his feet or legs. He cannot walk as short a distance as one block without discomfort in both calves, referred chiefly to the gastrocnemius group. He is obliged to rest before he can go any further. He is in excellent health. Has had no sickness of any description, and except for this he regards himself as perfectly well.

Physical examination. — Patient is a tall, thin man. The arches of his feet are normal in appearance and there is no restriction in the motions of the feet. The permeability of his anterior tibial vessels is questionable, but there is no congestion of the feet, either active or passive. X-ray shows very definite atheromatous changes in both the anterior and posterior tibial vessels.

Case IX. Male. Seventy years (?). Laborer.

Diagnosis. — Senile gangrene.

This patient was seen in consultation with his family physician. He was complaining of excruciating pain referred to the right foot, which had been troubling him for four or five months. An ulcer had appeared some six or eight weeks previously upon the dorsum of the fourth toe, opposite the second phalangeal articulation. This went down to the bone exposing it, and there resulted from it a necrosis of one of the phalanges, so that at the time of the consultation this was protruding from the base of the ulcer. The pain had been so severe that sleep was impossible, and the patient had been obliged to walk the floor and remain in a sitting position alternately all night long. Very considerable doses of morphia had had only a mildly palliative effect. There had been no injury. The urine contained no sugar. Patient showed marked evidence of senility, and doubtless the age which he gave was far from being correct. The vessels, wherever they were palpated, showed marked evidence of thickening, and the blood tension was quite high. There was a marked arcus senilis. The foot was moderately congested, though very slightly swollen. The ulcer had ceased to discharge and the end of the phalanx which had necrosed was protruding from the center of the ulcer and appeared more like a piece of chalk than it did like bone. Pulsation in the dorsalis pedis vessel could be detected. The color of the affected foot was not materially different from that of the other side, but the patient had had no symptoms in the left foot.

Case X. Female. Age thirty-seven. Seamstress. *Diagnosis.* — Raynaud's disease (lues).

The patient was suddenly seized fourteen years before, when she was twenty-three years of age and in apparently perfect health, with a very high degree of pain in the left leg below the knee extending to the toes. The pain was so great that she was removed to a hospital, where there developed quite rapidly a dry gangrene of the toes, and the entire foot anterior to the metatarso-phalangeal joints was spontaneously amputated. Over the dorsum of the foot an ulceration appeared at that time which has never healed, though it has occasionally appeared to be inclined to do so. A similar, though somewhat larger, ulceration appeared a few years after this in the outer aspect of the calf, and this has never healed. Skin grafting has been tried once or twice but to no purpose. A similar condition manifested itself in the right leg very shortly after the process commenced in the left, but did not extend to gangrene; neither are there any ulcerations on that leg. The patient is apparently perfectly healthy. No positive history of syphilis could be obtained in the family, the only fact of any significance being that the patient was one of seven children, the first four having died in infancy of conditions which she has no knowledge of. She herself is perfectly well except for these ulcerations and the fact that a dependent position of the limb entails a great deal of discomfort and she is unable to walk more than about her room and has never been in a condition to attempt even the adjustment of an artificial limb. There is no obvious sign of arteriosclerosis either in hardness of palpable vessels or in an elevated arterial tension. Condition suggests very strongly a syphilitic endarteritis, though there is no positive proof, or a Raynaud's disease.

Case XI. Mrs. D. Age fifty-two.

Diagnosis. — Angina cruris.

Three years ago this patient was seen, at which time she was complaining of a painful right great toe. The discomfort seemed focalized in the articulation between the first metatarsal and its adjoining phalanx. There was a moderate degree of hallux valgus and some apparent enlargement of the head of the metatarsal. The symptoms were so definitely focalized in this situation and were so aggravated by any lack of particular attention to the shoeing problem that it seemed that the symptoms were due to the hallux valgus alone. Accordingly Hüter's operation was performed. The convalescence from the operation was uneventful, except that it was somewhat protracted by the patient's manifest inability to bear weight on the joint as early as is usually possible in these cases. A plate was fitted up with the hope that the patient would be able to walk sooner if pressure were taken off the base of the first metatarsal. She was quite nervous and it seemed impossible for her to stand the discomfort of the support, and it was, therefore, omitted, and a soft felt pad was substituted. Even this seemed to cause her considerable discomfort. An x-ray was taken and a mild degree of hypertrophic arthritis was manifest about the articulation between the astragalus and the scaphoid and the joint between the scaphoid and the internal cuneiform. This did not, however, seem to be competent to explain the persistence of her discomfort and the fact that it was extending up the leg, — in fact, was more prominent about the malleoli and the back of the calf than elsewhere. After prolonged fixation and rest the symptoms would seem to be somewhat better, but the institution of such procedures was very distressing to the patient and they had to be abandoned. She found it impossible to walk as much as a city block without aggravating her symptoms very materially. There were no cramps, but the pain persisted sometimes quite well into the night, particularly on days when she was on her feet a great deal.

Examination of the arterial system indicated some thickening of her vessels and elevation of her arterial tension, and there was a very questionable pulsation in the dorsalis pedis vessels.

Acting upon this suggestion the use of the vibrator has very materially improved the local conditions. Pain has been lessened and her ability to walk has increased considerably. The result of the practice of this form of therapeutics has served to clear up the diagnosis in this case very materially.

Case XII. Mr. F. S. C. Age forty-five. Oct. 4, 1906.

Diagnosis. — Angina cruris.

For about three years he has been troubled by pain referred to his left foot. He has attributed these symptoms to the fact that twelve years ago he stood a great deal on his left foot while he was working in a shoe factory and running a machine which required him to use his right foot in its control. Of recent years he has been conducting a small country post-office and has had to stand a great deal of the time. When he walks rapidly he has considerable pain referred to the left instep and extending up the calf of the leg, occasionally as far even as the thigh and the lower part of the back. The right foot never causes him any inconvenience. When he is at rest, that is, not standing on the foot, he has no trouble at all. He has never noticed that it swells.

Physical examination. — Well-developed and nourished man, weighing 170 lb. and muscularly well set up. Both feet have very low arches, the left one particularly so. There is comparatively little pronation of the foot, but considerable adduction at the metatarsal joints. There is no muscular spasm and no restriction in the various motions of which the foot is capable. No swelling and no abnormal perspiration. Passive congestion is absent. There is a slight degree of hallux valgus in both great toes, more especially on the left, and some relaxation of the anterior arches.

He was fitted with a flat-foot plate with moderate height arch. Exercises and hydrotherapy were suggested as adjuncts in the treatment. There was only a very slight amount of relief following the application of the plate and the patient has been heard from occasionally, usually, however, when the plate was broken and he requested that a new one be made, each time complaining, however, that the relief from his symptoms was not as great as he had hoped that it might be.

April 24, 1908. Two or three days ago patient wrote saying that the foot felt cold a great deal of the time, that he had a great deal of cramp in the calf of the leg and occasionally in the sole of the foot, and that he could walk only a very short distance with any degree of comfort. He has found much relief on getting home, this winter particularly, and putting his left foot in the oven, and whenever he could stand over a register he invariably made a point of doing so.

On physical examination, the height of the arches, the flexibility of the feet and the other evidences of a broken-down arch have not changed over the condition as observed in October, 1906. The toes were slightly colder on the left foot than they were on the right when subjected to the same degree of exposure. The pulsation in the dorsalis pedis artery on the left foot was entirely obliterated, and only slight pulsation could be felt in the posterior tibial. On the right foot the pulse was readily perceptible and entirely synchronous with the heart beat in both posterior tibial and dorsalis pedis vessels. There was no evidence of general arteriosclerosis either in a palpable thickening of the vessel walls or an elevation of the arterial tension.

Vibratory massage advised.

A consideration of the reports of cases in the foregoing literature of the comparatively large group of vascular disturbances, and the study of the cases which have come under the writer's personal observation, lead to certain deductions.

Whatever may be the remote etiologic factors operative in the various conditions here indicated, and whatever closeness of resemblance there may be in the pathologic conditions found, there seem to be fairly good grounds for separating these types from one another on the basis of their clinical phenomena.

There is a tendency in some cases for symptoms to overlap to a certain extent and yet the fundamental symptomatology is not often seriously obscured.

The essential step in arriving at an understanding of these cases has been taken when it can be determined whether the peripheral symptoms are evidences of a lesion of the central nervous system or whether they are caused by peripheral irritation and vasomotor disturbance.

Erythromelalgia seems to have been associated in a large number of cases with evident lesions of the central nervous system. In many cases, however, it is impossible to establish the existence of such central lesions. The fact that erythromelalgic symptoms are local and are not associated with any evidence of general endarteritic changes is strongly suggestive of vasomotor interference. Gangrene is not a characteristic of erythromelalgia and the redness of erythromelalgic conditions seems rarely exhibited in patients who manifest those signs which are significant of Raynaud's, viz., the stages of local blanching and gangrene. The classical descriptions of Raynaud's in the textbooks certainly present a type which differs very markedly from the erythromelalgias. Extreme cases of erythromelalgia may occasionally eventuate in gangrene, but they will have pursued a very different course in arriving at that goal than do the cases of Raynaud's disease. Those who find the clinical differentiation between erythromelalgia and Raynaud's difficult should go over the natural history of the patient's report carefully, and not be content to make a partial differentiation. The prognosis of Raynaud's is generally conceded to be good, whereas that of erythromelalgia is often quite grave and it is therefore important, when possible, to arrive at a positive conviction as to diagnosis.

Angina cruris, or intermittent limping, has not been generally associated with visible circulatory disturbances and, unlike the other conditions here discussed, is not coupled with pain when at rest. It is more often associated with evidence of general arteriosclerosis than not, though there seem to be reflex conditions which cause a localized vaso-constriction in some cases of this description. Redness of the toes is not common.

Morvan's disease is so rare that it needs hardly to be mentioned. Its invariable association with symptoms which are referable to the central nervous system makes the diagnosis clear as a rule.

The types of arteriosclerosis which are found in syphilitic or senile individuals may, of course, cause certain of the peripheral symptoms which are found in erythromelalgia and Raynaud's disease and, as has already been pointed out, in angina cruris, but the type is not that of an intermittent vasomotor disturbance of irregular distribution, but gives abundant evidence of the general character of the process. Furthermore, the history of syphilis or the evidence of senility makes it evident that the peripheral disturbances are secondary and arterial, not primary and vasomotor.

TREATMENT.

The problem of ameliorating the sufferings of bad cases of erythromelalgia is a difficult one. Elevation of the limb and the enforcement of absolute rest to the part seem to offer the greatest chance of relief. The question of when surgical interference should be practiced is one of great difficulty. It seems impossible to determine when an obliteration of vessels, such as is known to take place in erythromelalgia, will have attained sufficient severity to demand amputation. Certainly obliteration of pulsation in the dorsalis pedis vessels is not a condition which indicates it. The sufferings of these patients occasionally justify such radical measures. Ultra-conservatism should characterize the treatment of these cases by the surgeon, but he should be ready to interfere when the conditions demand it.

In angina cruris, where static disturbances exist, they should be alleviated, but the most benefit will follow vibratory massage and all those measures which are designed to overcome the hunger of the muscles for an adequate blood supply.

The gangrenous conditions which result from extreme degrees of arteriosclerosis, whether senile or syphilitic, must be managed by following out all procedures which lessen resistence to the flow of blood, and having determined the limits of viability of tissue supplied by the obliterated artery, the surgeon must remove these parts, where the circumstances call for it, and the patient is in a proper state to withstand it.

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Clinical Department.

A CASE OF TRAUMATIC FOCAL TELANGIECTASIS OF A TENDON.

BY ARTHUR T. LEGG, M.D., BOSTON,

Junior Assistant Surgeon, Children's Hospital.

MARY C., single, thirty-three, came to the Carney Hospital Out-Patient Department, Dec. 17, 1906, with a history of having sprained her right ankle five years previous; the foot being turned in a position of varus. Up to a year ago she had occasionally experienced pain and stiffness in the ankle, especially in the morning, which would disappear after walking about for a while. During the last year, however, pain and stiffness have been constant.

Examination showed no limitation of motion of the ankle, no pronation or flatness of longitudinal arch. There was flatness of the anterior arch and the second toe showed a hammer-toe deformity. There was marked tenderness below and behind the external malleolus with slight thickening along the course of the peroneal tendons in this region. A Roentgenological examination showed no fracture of the tarsus. The condition was considered a lipoma of the peroneal tendon sheath and operation was advised. She entered the hospital Jan. 10, 1907.

Operation, Jan. 11, 1907, by the writer. The head of the third phalanx of the second toe was excised for the correction of the hammer-toe deformity. An incision 3 in. long was now made from below the external malleolus, along the course of the peroneal tendons. The sheath of the peroneus longus tendon was entered just below the malleolus.

The tendon here presented three cauliflower-like growths, each about the size of a small pea, occupying about an inch of the external surface of the tendon; between these the surface of the tendon presented a roughened appearance. A section of the tendon, including the growths, was excised.

Extending the opening in the tendon sheath behind the malleolus a growth resembling a fibro-lipoma presented itself. This extended about 2 in. along the tendon and was connected with the tendon sheath. This was also excised. The tendon sheath was closed by a continuous catgut suture; the skin incision by interrupted silkworm gut. Dry dressing.

The convalescence was uneventful with the exception of slight pain. She was allowed to walk on the tenth day and experienced some pain about the external malleolus and up the calf. This was relieved by massage and hydrotherapy.

The microscopical examination of the tendon growths, made by Professor Leary, of Tufts College Medical School, was as follows: The tumors consist of fat tissue crossed by broad bands of rather cellular connective tissue in which ramify large numbers of injected vessels. The surface of the masses is completely invested by an extremely vascular layer of this tissue. The vessels are, as a whole, larger than capillaries and in places show dilatation into cavernous spaces with irregular contour. None of the vessels shows a muscle coat, and for the most part the wall is made up only of an endothelial layer set directly on the surrounding connective tissue. The arteries of the growths are abundant, of large size and are normal. There is no inflammatory infiltration. Diagnosis: Lipoma with telangiectasis.

The growth connected with the tendon sheath was not examined microscopically, but grossly suggested a fibro-lipoma.

To the writer's knowledge only two such cases are reported in literature. Prof. Dr. Pets Leusden[1] reports two cases of similar tumors, both occurring on the flexor longus pollicis tendon. One occurred in a girl of four, the other in a boy of two. Pain on snapping the fingers called attention to the condition. The thumbs were flexed at the interphalangeal joint and could not be fully extended. A nodule could be felt, on passive extension, over the tendon of the flexor longus pollicis. The nodules were removed, and microscopically showed proliferation with branching of the blood vessels with considerable thickening of the media in some of them. There was no evidence of an inflammatory origin, nor was there any indication that the nodules were fibroma, sarcoma or syphilis. The increase in the number of the vessels and the branching suggested angioma.

The writer does not believe the tendon growths here reported to be true lipoma, but are to be explained by the injury five years previous having partially torn the tendon, during the healing of which an inflammatory lipoma from metaplasia was formed, which has since degenerated telangiectatically.

Leser[2] states that the commonly observed angiomatous lipomata are often incorrectly interpreted, since the primary constructed lipoma later degenerates telangiectatically or cavernously. A strict line of demarcation cannot always, however, be drawn between this and the true cavernous angioma.

In support of this view an unreported case operated upon by Dr. C. F. Painter is mentioned. The case presented clinically a typical lipoma of the knee joint. At operation a very vascular lipoma was found, which microscopically proved to be angiomatous.

The case is reported because of its rarity and on account of the possible occurrence of similar growths following injuries to tendons.

The writer is indebted to Dr. C. F. Painter, upon whose service the case was treated, for permission to report it.

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Reports of Societies.

WINTER MEETING OF THE NEW ENGLAND BRANCH OF THE AMERICAN UROLOGICAL ASSOCIATION.

Boston Medical Library, Feb. 4, 1908.

Demonstrations of Specimens and Reports of Cases.

THE CHOICE OF METHODS IN PERINEAL SECTION.

(Concluded from No. 2, p. 55.)

Again I must say I am sorry not to have heard the papers that have been read this evening.

Dr. C. S. Stern, Hartford, Conn.: I came here this evening to listen and not to speak. I think all we have heard has been very edifying and instructive.

These filiforms interest me very much. I have had some dozen of them in my office for two or three years, but never have succeeded in passing one of them into a stricture. It seems to me that the difficulty lies in too great pliability, so that the guiding force never reaches the point of the filiform, and therefore you hardly can get them to go through anything. Whalebone filiforms also are not satisfactory; and as a rule I have come to use very fine steel sounds, numbers 3 to 6 Charriere. Such an instrument, of course, is scarcely more than a steel wire and very dangerous, but I have succeeded in passing every stricture with it.

I have had very little experience with operative methods. But where I have been able to get in a small instrument, I have always been able to follow it with some larger sizes at the same sitting by waiting and leaving the instrument in for five or ten minutes. And three or four days later I have been able to dilate it with larger instruments. And for this reason the cases of impassable stricture in my experience have been very few and far between.

The case of sudden death related by Dr. Watson reminds me of a case of my preceptor's which came under my observation before I graduated. The patient had often had sounds passed before; and this time it was passed as usual; but later in the evening the surgeon was sent for because the man had a chill. The case rapidly developed into one of gangrene of the penis and died in a few days from septicemia. This was before the days of irrigation, and he very probably had an infection.

Dr. F. B. Lund: I also came to this meeting to listen and not to speak. I have been very much interested in the papers and discussions of the evening, and especially in those cases of sudden death. It is good to get an autopsy in these cases, and I think in some of them we are likely to find pathological conditions which we did not expect. I had the pleasure of assisting in a case of the late Dr. John Homans, a case operated on by divulsion. The patient died. He was a feeble man and had sinuses in the perineum. The autopsy showed mesenteric tuberculosis and hemorrhage into the cerebellum, so that perhaps the operation in the genito-urinary tract was not entirely to blame for his death.

I think that perineal section without a guide is the most interesting of the minor operations. The search for the opening looks so blind, and yet you always find it. I have never had to go in behind the stricture. The only case in which I got stuck was my first case, and then Dr. Watson came in and found the way in for me.

These old cases of the hospital bums are all the more interesting from the surgical point of view. I do not know of any greater satisfaction than when after a difficult search one finally finds the opening.

The resection of the stricture is very interesting. I have never done it. I have always found that in a collapsible tube the more you do with it the more scar tissue forms. It is like operating on adhesions in the abdomen; the patients go from bad to worse.

Certainly, as so many of the speakers have said, the least traumatism possible is best in the operation; one should, if possible, get in with a single longitudinal incision. Then, of course, after the operation, if the patients will not come back for treatment, the responsibility is up to them and not to the surgeon; and these cases then when neglected become all the more interesting from the surgical point of view.

I should doubt very much the ultimate advantage of any operation which requires much dissection in close proximity to any collapsible tube like the urethra.

Dr. Terry: In the treatment of stricture I believe that the perineal section should be the last resort. I have worked a good many hours trying to get filiforms in, and have felt very much pleased when they went in. So that I have made fewer perineal sections than if I had concluded pretty quickly that I could not get the filiform in. Recently I had a patient who was passing just a little bit of urine and was very anxious to have something done for him, and it was certainly three hours before I got in the filiform. I left that in, and the next time I tried I could get in a Banks dilator, which, I think, is of a great deal of use. It has served me very well in many instances. Those that are made now, however, are not so good as those manufactured several years ago. They have a bulb on the end so large that if you could get it through you could get a sound through.

One case came under my observation in which a whalebone filiform did a good deal of harm. One was passed in my clinic and the man bled considerably afterward. I advised him to go into the hospital and remain there. He did not do this, but went home and returned the next day with considerable urinary infiltration even on to the belly wall. I made incisions into the belly wall and the scrotum, and he just managed to live through it. So that it seems to me if one uses a filiform he should do it with the greatest care.

In internal urethrotomy I have had very little trouble afterward. I know it is not generally considered the proper thing to do in one's office; and yet I have done it quite a number of times in the office, and so far no harm has come from it. I have usually used cocaine.

So far as the matter of chills goes, I have had one patient who had a perineal section done several years ago, and who has neglected it more or less, and now has to have sounds passed, and he is as certain to have a chill as I to pass a sound, although he is irrigated with permanganate of potassium. It may not come on for two or three days, but he will have it. He will have a high temperature and get very sick.

Dr. O. C. Smith, Hartford, Conn.: To me this has been a very interesting evening, especially so since the subjects under discussion have been those which are frequently more or less neglected. Some of these operations seem so trivial that they are performed without the usual surgical precautions, and I believe this is one of the reasons for an occasional fatality resulting from an apparently simple operation.

The work is at times performed hastily, in the physician's office or at the patient's home, without previous knowledge of the patient's hemoglobin, the condition of his kidneys, his heart or his idiosyncrasies. Some patients are particularly susceptible to trauma and will have a serious chill following urethral manipulation, though no infection is introduced.

It is not possible that all cases of urethral chill are due to infection, as many of them are not followed by fever or other symptoms.

I think that the Lord has been good to the genito-urinary surgeon in the same way that he has been good to the gynecologist, by providing the perineum with a wonderful resistance to infection. Even in the old days when gynecologists were not particular about sterilizing their instruments and hands or operating field, they obtained good results, and it is so with the perineum in our work.

We do a prostatectomy or urethrotomy and have little fear of wound infection, in spite of the opportunities for it by contact with foul secretions.

Another noteworthy thing is the readiness with which urethra fistulæ tend to heal. It has seemed to me remarkable in a number of cases in which I have been obliged to remove a considerable portion of the urethra, to see how quickly the space is filled in. These factors are with us and help us in our work to make it as successful as it is.

I agree with the last speaker in what he said as to the danger in using filiform bougies that find their way into the crevices and recesses and make false passages. This field of surgery is one which requires the most gentle manipulation.

I have been interested in witnessing the French surgeons in their work, manipulating as carefully and delicately as an oculist in his operations. Frequently the general practitioner fails to appreciate the necessity of this. We cannot impress upon our minds and the minds of others too emphatically the importance of cautious, gentle work, which will at least do no harm. In many cases of urethral exploration, the previous use of a small quantity of cocaine, followed by filling the urethra with sterile oil, will greatly facilitate in passing any obstruction.

Dr. R. F. O'Neil: With regard to the use of steel sounds of small caliber: At the Dispensary we have a few old patients who make us occasional visits when they have to, who have tough fibrous strictures of considerable extent and long standing; on these patients I have used sounds from 1 to 5 French with considerable success after all other methods had failed. They are, of course, very dangerous instruments and must be used with the greatest care. I much prefer the flexible French filiforms to the whalebone ones. Dr. Whitney's set of interchangeable followers will be of very great value. I do not consider salol as good a urinary antiseptic as hexamethylenamin. With regard to chills following instrumentation, when I was out-patient house officer, about ten years ago, once in a while a patient would come back with the history of a chill following the previous visit; it was not common but not sufficiently uncommon to cause remark; irrigations were not then used. At the Boston Dispensary clinic and in private practice it is routine with me to irrigate all instrumented cases with a solution silver nitrate 1 to 6,000. I do not know of a single case of chill following sounds occurring during the last few years since this method has been carried out. Personally I have never resected a stricture but shall do so when I get the proper case. I saw Dr. Cabot operate on one of his cases, removing quite a bit of urethra. It was instructive to see how easily and with what little tension the cut ends were brought together. The transverse incision and working from behind forward in deep stricture without a guide is of undoubted value. I recollect at least two cases of retrograde operation which I feel sure would have been unnecessary had it been employed.

Dr. Hugh Cabot: I am entirely in accord with the view expressed that gradual dilatation is the method of choice in the treatment of cases to which it is applicable, which includes the vast majority of cases. In what I had to say I simply took that class of cases in which for one reason or another it was out of the question. These cases are less frequent with more skillful men, and with the better class of patients. This is partly because such patients can be more readily influenced, and we can be more certain that they will return for treatment, and then their general health is better regulated. The hospital patients come at a later stage and they show a higher percentage of impassable strictures and cases followed by a chill or general reaction. So that I think it is true that we shall have to do more operations among this class than in private practice.

In regard to the use of bougies, the bougie followed by a tunnelled sound is a dangerous instrument. I have twice seen it withdraw long shreds of mucous membrane. It seems to me a distinctly less valuable instrument than the French guide with the follower, mentioned by Dr. Mitchell, especially if they can be obtained with a uniform scale.

In answer to Dr. Chute's remarks in regard to internal urethrotomy in the deep urethra, I have no doubt I was unnecessarily dogmatic in my statements. On the other hand, I do not think that the abandonment of the operation is confined to this community. Many prominent French surgeons have objected to it. It has been abandoned in Guyon's clinic, apparently for the reason that serious hemorrhage was reported. The objection to it is that in those cases to which it is readily applicable, an external urethrotomy is a very easy operation, and is followed by very little if any increase in the amount of scar tissue. The external operation is distinctly safer, as the veins are less likely to be cut.

Dr. Chute's case of resection of a stricture, it seems to me, was not given a fair chance, because he left it to close by scar tissue. I believe that if the mucous membrane is brought together with sutures and without tension, the amount of scar tissue will be very much diminished.

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Book Review.

Why Worry? By George Lincoln Walton, M.D. 12mo. pp. 275. With an illustration. Philadelphia and London: J. B. Lippincott Company. 1908.

The "long-suffering family and circle of friends," to whom this book is dedicated and "whose patience has been tried by the author's efforts to eliminate worry," have suffered in a good cause if their suffering has aided in the production of the book that lies before us. Even the reviewer, wearied with the pseudo-psychological inanities and verbose platitudes of the average work on psychotherapeutics, is ready to pardon much suffering deliberately caused by those efforts to eliminate worry in return for the relief afforded by a work on psychotherapeutics filled with such clear, concise good sense and sanctified by humor. Although written for the lay reader, and originally published in part in a popular magazine, it may be read with profit by the physician, who is too often at a loss how to deal with this trying class of patients, for whom so much can often be done by the skillful and intelligent practitioner. The book, however, is not the conventional treatise on psychotherapeutics, retailing once more the commonplace explanations and directions that read like Mr. Bok's answers to correspondents, but a practical and common-sense effort to enable the average man to "eliminate undue solicitude;" written with a vivid appreciation of the various characteristic forms of worry and obsession, the "unduly insistent thoughts"; with a wealth of original illustration and apt quotation, and a rich store of sound advice and wise maxims. Worry is traced to exaggerated self-consciousness and obsession, and is to be combated, first, by initiating a new attitude — the commonplace — and then by modifying our self-consciousness by externalizing our thoughts and broadening our interests. "One thought can be driven out only by another," but, "if we will, we can select our thoughts as we do our companions." To such an end the cultivation of a fad is often a useful remedy in controlling obsessions and replacing morbid worries by an external interest. The worrier often resists any effort to control his worries; like the New Englander, he "enjoys poor health," but, if he will make the effort, his condition is not hopeless. "Some of us are started high on the ladder, some low; but it is certainly within the power of each to alter somewhat his level. We can slide down, but must climb up; and that such commonplaces as are here prescribed may help some of my fellow worriers to gain a rung or two is my earnest wish"; and the book is well-adapted to fulfill that wish. While thus warmly commending the work as a whole, we regret that the author, from his ignorance of Chinese, has been led into serious error by some well-intentioned but unlearned adviser. The quotation upon the titlepage, which is repeated in the body of the work and forms its text, although ascribed to Chuang-Tszu, is in reality a lamentable perversion of the teachings of the great follower of Lao-Tszu. The perversion may be and is apt for the purpose, but even a follower of Confucius should not so distort the text of the divine classic of Nan-Hua. The author is evidently unfamiliar with the "Philosophy of the Golden Pup,"(for, if he were, he could not have missed quoting it), but his own philosophy is in close harmony with that too-little known poem:

"What's the use o' worryin',
For the world will still go round;
What's the use o' scurryin',
When it's easy to sit down?

. . . .

Oh! quit yer silly stewin',
For it doesn't pay a bit.
Just do what *I'm* a-doin'
And sit a *well-sot sit.*"

Syphilis in the Army. By Major H. C. French, Royal Army Medical Corps. London: John Bale, Sons & Danielsson, Ltd. 1907.

The book before us, written by a man who has given much attention to the general subject, is an effort to bring clearly before the notice of the authorities the prevalence and dangers of syphilis in the army and to suggest means by which it may be minimized and avoided. The book should be of interest to physicians in general, but particularly to those who are called upon to deal with the problem of venereal disease in large groups of men.

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LEGISLATION REGARDING THE INSANE AND OTHER DEPENDENTS.

After a period of exceptional activity, extending over approximately ten years, in relation to the great problems of the care of the insane and other dependents, it is fitting that we should at this time revert to the results in legislative enactment to which this work has led. In 1898, not quite ten years ago, the present State Board of Insanity assumed its duties. There were at that time approximately a thousand insane patients in the various almshouses of the state, and the overcrowding in the existing institutions for the insane was also extreme. One of the first problems, therefore, which met the newly constituted Board of Insanity was to provide proper accommodations, not only for those already in the hospitals for the insane, but also for those whom it was planned to transfer from almshouses. The agitation for state care of the insane, which the Board of Insanity from the first has had in mind as the most rational solution of the general problem, and to which we have before alluded editorially, resulted in definite action in 1900, and the law became operative in 1904, with the exception of Boston. Upon this foundation legislation has since taken place, with the result that this year a bill has been passed including Boston in the state care act and providing for the taking over by the state of the institutions which have hitherto been under the jurisdiction of the city.

It was evident to those who have followed the development of the plan that in time this consummation would be reached and that a single system of caring for the insane and other dependents would prevail throughout the state. In carrying out this scheme many difficulties have naturally been encountered, and ideas have been put into effect which fifteen years ago had practically not entered the public mind. Among these one of the most important is certainly the so-called colony plan. By means of a colony of the insane or others requiring supervision it has been possible on the one hand to relieve the institutions of many of their chronic but often able-bodied patients, and, on the other, to secure through the work of these persons a certain return for their care. This has naturally led to the acquisition of much land throughout the state whereon such colonies may be developed. In the further progressive development of the general plan, the problem of the feeble-minded quickly forced itself upon the attention of the board. A very slight amount of investigation demonstrated the fact that there were many feeble-minded persons in the state for whom no provision was possible under the existing conditions. In spite of the admirable work being done by the Massachusetts School for Feeble-Minded under Dr. W. E. Fernald's supervision, and the phenomenal development which that institution has made, both in numbers and resources, it was apparent that an additional institution was essential if the full needs of this most dependent class were to be met. A bill was therefore passed two years ago providing for an additional school at Wrentham, for which $50,000 was appropriated for land and buildings. As a result of this legislation a new institution for feeble-minded was started, which now accommodates fifty patients. This winter a further appropriation was granted, making in all $250,000 for this institution, with provision for two hundred inmates. It is hoped in the future to add approximately one hundred beds a year for the feeble-minded alone in the state. This provision, together with the development of farm colonies, it is estimated should suffice to meet the demands made by this unfortunate class.

A further problem which has presented itself is in relation to epileptics. The advance made in the treatment of this class of dependent poor through the establishment of separate hospitals is not to be questioned, but a still further classification is evidently desirable if the best results are to be obtained. As at present constituted, many of the inmates of epileptic hospitals are insane, and as such could more properly be cared for in insane hospitals than in institutions devoted to the care of epileptics. The hope for the future is that children's departments may be established in which children and young persons just developing the disease may be treated apart from insane adults. Although the preliminary expense for any such enlargement must be very considerable, it is expected that a classification of this sort will ultimately tend toward economy through the increased facilities for study and treatment which such classification will allow and encourage.

Finally, the problem of the insane in Boston, or in the so-called Metropolitan District, presents itself as perhaps the most important which the state has to face. The feeling has grown, among those interested in the subject, that a so-called psychopathic hospital is imperatively needed if the study and treatment of mental affections is to be placed on a plane with other branches of medical research. Such a hospital, designed to receive cases of all sorts with the purpose of distributing them later to suitable institutions throughout the state, should, if possible, be placed in the neighborhood of a medical school and should be used for teaching in the same way as other hospitals are used. Space does not permit us at this time to enter into detail regarding such a hospital, but that it is essential to the carrying out of the general plan which the Board of Insanity has outlined is evident. Legislation has also this winter been enacted looking toward the building of such a psychopathic hospital, as well as a branch of such a hospital, in or near Boston, for the treatment of voluntary mental patients. A further bill, which has no immediate relation to those of which we have already spoken, is one authorizing the city of Boston to establish and maintain within its limits suitable wards for the reception and study of so-called "observation cases," which include alcoholics, persons picked up in the streets and others suffering from mental disturbance who have hitherto been sent for observation to the House of Correction at Deer Island.

In general, through the activities of the State Board of Insanity, the Boston Society of Psychiatry and Neurology, and the interest of legislators and public-spirited citizens, it appears that the difficult problem of the economical, scientific and progressive study and treatment of the insane and others in this state will soon be solved, and that Massachusetts will take its place as a pioneer in this as in other departments of public endeavor.

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A SCHOOL OF PUBLIC HEALTH.

One accustomed to observe the trend of affairs at the present time must have noted how imperatively the subject of the public health has been demanding recognition. The essential ideas underlying this most pervasive movement have been crystallized in the recent addresses of Dr. H. L. Burrell, of Dr. William S. Thayer, and of Dr. Charles Harrington, to which previous reference has been made in these columns.

It is now becoming recognized that public health officers, and those physicians whose ambition it might be to fill such positions, should receive much more education than is now general, regarding the prevention of disease. Only two or three medical colleges have courses leading to proficiency in such work; there is to-day, it would seem, no institution exclusively devoted to the fitting of men for this important and most honorable calling. Much has been and is being done in lieu of such institutional instruction; as, for example, the "school" for the health officers of Indiana, which has annually been called by Dr. J. N. Hurty, the secretary of the Board of Health of that state, the meetings of which in May last were attended by three hundred health officers.

We are glad to notice an elaborate and exhaustive paper by Dr. Norman E. Ditman,[1] in which he sets forth the need for a school of Sanitary Science and Public Health. He would not rest content with the establishment of chairs to this end in existing medical colleges; he would have a comprehensive institution solely devoted to such study and instruction in one large city, or an institution of this kind in each of several large cities. In such a school two objects, at least, would be subserved: there would be training given in the known methods of preventing disease and death; and there would be afforded opportunities for adequately extensive study of the diseases which are not now surely preventable. Of the latter are those especially which we infer by analogy or otherwise to be infectious, but of the specific agency of which we are as yet in ignorance. Such a school as Dr. Ditman proposes should be planned to give instruction to physicians, health officers, sanitary engineers, school nurses, teachers and inspectors, theological students, legislators, charity officers, "social workers" and interested members of the community in general; the list of subjects for instruction which Dr. Ditman enumerates is of such length that a reprinting of it would occupy one of these columns.

The tremendous economic losses which civilization has sustained by reason of preventable diseases have been exhaustively set forth in both medical and lay literature. Ditman presents many facts of this kind in a compact and most informing and convincing way. Suffice it to note here a mere detail: the economic losses from typhoid fever in the four cities of New York, Philadelphia, Pittsburgh and Scranton in the past year alone are estimated by him at $3,750,000. Such a sum as this, judiciously expended, would go very far indeed toward establishing the "School of Public Health" which he advocates.

Nor would the establishment of such a school or schools suffice Dr. Ditman. He voices a now very general belief, particularly among physicians, that there should be a National Board or Department of Health, by which would be coordinated and promoted the efficiency and the work, not only of such schools, but also of all other agencies — educational, humanitarian and political — engaged in disease prevention. When one reflects on the scale upon which the American people is accustomed to conduct its affairs, the advantages of such a plan as this must at once be obvious. In many localities a great amount of work has already been done regarding preventive measures and the education of both the profession and the laity in them; there is now most undeniably needed a focal point by means of which all these centers of wholesome activity shall be properly organized and made to work harmoniously together. Thus would beneficent effort, much of which would otherwise be sadly ineffective and fruitless, be extended and expanded in practically indefinite measure.

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MEDICAL NOTES.

The Use of Denatured Alcohol a Criminal Offence. — It is reported from Washington that Commissioner of Internal Revenue Capers has stated that a doctor or druggist who writes or puts up a prescription for denatured alcohol for medicinal purposes is liable to criminal prosecution. This decision is the result of prescriptions for external use of denatured alcohol given out by druggists who were unaware of the law.

Samuel D. Gross Prize. — The Philadelphia Academy of Surgery announces that essays will be received in competition for the Samuel D. Gross prize of $1,500 until Jan. 1, 1910. The conditions are that the prize "shall be awarded every five years to the writer of the best original essay, not exceeding one hundred and fifty printed pages, octavo, in length, illustrative of some subject in Surgical Pathology or Surgical Practice, founded upon original investigations, the candidates for the prize to be American citizens."

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[1] Education and its Economic Value in the Field of Preventive Medicine. *Columbia University Quarterly*, Supplement to No. 3, June, 1908.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, July 14, 1908, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 61, scarlatina 29, typhoid fever 18, measles 91, smallpox 0, tuberculosis 45, cerebrospinal meningitis 0.

The death-rate of the reported deaths for the week ending July 14, 1908, was 18.45.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, July 11, 1908, was 209, against 184 the corresponding week of last year, showing an increase of 25 deaths and making the death-rate for the week 17.61. Of this number 122 were males and 87 were females; 202 were white and 7 colored; 145 were born in the United States, 57 in foreign countries and 7 unknown; 43 were of American parentage, 133 of foreign parentage and 33 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 42 cases and 6 deaths; scarlatina, 30 cases and 1 death; typhoid fever, 14 cases and 0 deaths; measles, 101 cases and 7 deaths; tuberculosis, 45 cases and 26 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 8, whooping cough 2, heart disease 28, bronchitis 3 and marasmus 9. There were 15 deaths from violent causes. The number of children who died under one year was 54; the number under five years 74. The number of persons who died over sixty years of age was 42. The deaths in public institutions were 77.

Cerebrospinal meningitis: 1 case reported.

Advisory Medical Board in Cambridge, Mass. — The city of Cambridge this year, coincidently with the opening of its tuberculosis camp, has through its Board of Health appointed an advisory board of physicians whose function it will be to assume general responsibility for the health conditions of the city, particularly with relation to epidemic diseases. The appointees on this board are Drs. E. H. Stevens, F. W. Taylor, T. E. Cunningham, Walter Wesselhoeft and C. H. Thomas.

Industrial School for Crippled and Deformed Children. — This excellent charity, which has now been in operation for a number of years, provides, as its name implies, useful employment for children incapacitated by disease or deformity for the ordinary work of life. It is now announced that the job printing department will be glad to have orders for the summer months. The department is equipped for various kinds of printing, done under the direction of a competent printer.

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Current Literature.

Medical Record.
May 30, 1908.

1. Lambert, S. W. *Melena Neonatorum with Report of a Case Cured by Transfusion.*
2. Berg, H. W. *The Differential Diagnosis of Meningococcus Cerebrospinal Meningitis from Other Types of Cerebrospinal Meningitis.*
3. *Phillips, W. C. *A Plan for Reducing Infant Mortality in New York City.*
4. Smith, H. E. *The Correlation of Eye Strain and the Functional Neuroses.*
5. Gross, M. *Disturbances of Gastric Secretion; a Practical Study.*
6. Knox, R. W. *Drainage of Wounds.*
7. Sachs, T. B. *Some Observations on the Ophthalmo-Tuberculin Reaction.*

3. Phillips' plan is to educate the mothers of infants by the class system in the care of their babies, to encourage breast feeding, and to teach the principles of pasteurizing and sterilizing the milk. And also to encourage the establishment of milk depots where milk can be obtained at the cheapest possible rates. He cites the great work done in France in the last ten years by education of the mothers, as an example to follow in this country.
[W. B. R.]

New York Medical Journal.
June 6, 1908.

1. Cowing, R. B. *Expert Testimony.*
2. Abbott, E. G., and Pingree, H. A. *The Restoration of the Normal Balance of the Foot.*
3. Piffard, H. G. *The Specific Action of Mercury in Syphilis.*
4. Lynch, J. M. *Intussusception of the Sigmoid.*
5. Albee, F. H. *Osteomyelitis.*
6. Tubby, J. T., Jr. *A Simple "Air House."*
7. Alger, E. M. *To What Extent is Migraine Amenable to Treatment of the Eyes?*
8. Tucker, B. R. *Epilepsy.*
9. Karpeles, M. J. *Multiple Conception.*

The Journal of the American Medical Association.
June 6, 1908.

1. Burrell, H. L. *A New Duty of the Medical Profession: the Education of the Public in Scientific Medicine.*
2. Thayer, W. S. *Relations of the Physician to the Public. Duties and Opportunities.*
3. *Crile, G. W. *The Cancer Problem.*
4. Boland, F. K. *Varicocele and Its Treatment.*
5. Wiel, H. I. *Meaningless Diagnoses.*
6. Neer, C. S. *Comatose Pernicious Malaria.*
7. Onuf, B. *Psychotherapy.*
8. Loeb, L. *The Production of Deciduomata.*

3. Crile believes that the attainment of the limits of surgical possibilities in cancer is still far removed. He cites interesting lines of possible advance. The most interesting is his work on hemolysis based upon the work of Kelling and others. Crile found hemolysis in no instance in 125 normal individuals. Among 80 patients with cancer, 82% showed hemolysis, while those with benign tumors showed no reaction. The reaction is

present in certain cases of tuberculosis. In chronic suppurations and acute infections, no hemolysis occurred. Of the 20% of cancer cases that did not show hemolysis, all but 1 were either inoperable or very advanced. While this hemolytic test for malignancy is not specific at the present time, the reaction may be a valuable aid in diagnosis, and in several instances has been the only positive evidence, and the diagnosis was confirmed at operation. The use of transfusion Crile believes can still further minimize the dangers of shock and hemorrhage. Preliminary hemolytic tests, however, should be made in every instance. [R. I. L.]

Surgery, Gynecology and Obstetrics.

June, 1908.

1. *Murphy, J. B. *Perforative Peritonitis: General, Free, Suppurative.*
2. Binnie, J. F. *An Operation for the Repair of Sunken Nose.*
3. *Mayo, W. J. *Anemia Spot on the Duodenum, which May be Mistaken for Ulcer.*
4. *Lexer, E. *Substitution of Whole or Half Joints from Freshly Amputated Extremities by Free Plastic Operation.*
5. Weeks, S. H. *Surgery of the Gasserian Ganglion.*
6. *Martin, W. M. *A Unique Anomaly of the Great or Gastrocolic Omentum.*
7. Johnston, G. B. *Diverticulum of the Vermiform Appendix, with Report of a Case.*
8. *Johnston, G. B. *Non-Parasitic Cysts of the Spleen. Report of a Case.*
9. Carmalt, W. H. *The President's Address before the American Surgical Association. Some of the Debts which Medical Science Owes to Surgery.*
10. *Finney, J. M. T. *Congenital Idiopathic Dilatation of the Colon (Hirschsprung's Disease).*
11. Sherman, H. M. *Some Technical Points in the Cleft Palate Operation.*
12. *Coley, W. B. *Further Evidence in Support of the Theory that Hodgkin's Disease is a Type of Sarcoma.*
13. Rodman, W. L. *How Frequently do Gastric Ulcers Become Carcinomata?*
14. *Bunts, F. E. *Infantile Hypertrophic Stenosis of Pylorus.*
15. *Blake, J. B. *The Use of Sterile Oil to Prevent Intraperitoneal Adhesions. A Clinical and Experimental Study.*
16. MacLaren, A. *Pelvic Abscess with Special Reference to Rectal Drainage.*
17. Bevan, A. D., and Smith, J. F. *The Diagnosis and Treatment of Kidney-Stone.*
18. Vaughan, G. T. *Stone, Tuberculosis of the Kidney, and Perinephric Abscess.*
19. *Brewer, G. E. *Acute Unilateral Hematogenous Infections of Kidney.*
20. McCosh, A. J. *Results of Operation on the Kidney for Tuberculosis and Calculus.*
21. Marden, J. K. *Case Report of Plastic Repair in Old Gunshot Wound of Abdomen.*

1. In an elaborate review of the subject of general, free, suppurative peritonitis, Murphy reiterates the importance of prompt, rapid operation, adequate drainage, minimal anesthesia, Fowler position, and rectal seepage as cardinal details of treatment. There is a valuable, selected, recent bibliography.

3. Mayo calls attention to the fact that traction on the stomach to facilitate exposure and inspection of the first part of the duodenum may, by interference with the vascularization of the parts, cause the appearance just distal to the pylorus of an anemic spot, easily mistakable for ulcer. Differentiation is made by the absence of induration and by the fugacious character of the spot, which, moreover, has not the milky color of true ulcer.

4. Lexer describes 6 successful cases of transplantation of the whole or a part of a joint from a freshly amputated limb, including articular cartilage, ligaments and epiphysis, into another patient who had had excision of a joint for ankylosis or bone-tumor. In every case the grafted tissues lived and there was marked improvement, though not complete restoration, of function.

6. Mastin reports an apparently unique case in which at laparotomy and autopsy the great omentum was found to form a diaphragmatic partition across the abdomen, dividing the peritoneal cavity into two completely separate compartments. There was no history or anatomic evidence of previous peritonitis, and the abnormality was presumably congenital. Both surfaces of the omental diaphragm were covered with smooth, shining peritoneum, continuous with that of the adjacent viscera.

8. Simple, non-parasitic cysts of the spleen are very rare, less than 60 having been reported in the literature. Johnston records a case of his own observation and gives a brief but complete bibliography of the subject.

10. On the basis of a case of his own, treated by colostomy, lateral anastomosis, and subsequent resection of the sigmoid, Finney makes an extensive review of Hirschsprung's disease, or congenital idiopathic dilatation of the colon. Of the 13 theories of its etiology thus far advanced, he considers none entirely satisfactory, and suggests that the condition represents a gigantism due to lymphangiectosis, analogous to that of macroglossia and macrocheilia. He believes an operation in three steps, as stated above, the surgical procedure of choice.

12. The subject of lymphatic tumors and diseases is complicated and its terminology confused and unsatisfactory. Coley believes that pseudoleukemia, or Hodgkin's disease, and possibly also leukemia, is really a form of sarcoma, and as additional evidence in support of this belief cites two cases of Hodgkin's disease cured and two temporarily improved after treatment with x-ray and the mixed toxins of streptococcus pyogenes and bacillus prodigiosus. The argument is suggestive though not convincingly final.

14. To the 114 previously reported operative cases of infantile pyloric stenosis Bunts adds 1, and by tabulation finds the total mortality to be 55%. Results seem to show that pyloroplasty is the first and gastro-enterostomy the second operation of choice. Etiologically infantile differs from congenital stenosis, but there is no means of clinical differentiation other than the date of onset of symptoms. Failure to improve after brief medical treatment is an indication for early operation, which offers the best prognosis.

15. In a final report of his experiments in the use of sterile oil to prevent intraperitoneal adhesions after laparotomy Blake concludes that such use is safe and "moderately effective in sometimes preventing and usually diminishing the formation of post-operative peritoneal adhesions." The oil must be absolutely sterile; the quantity employed is 1 to 4 dr.

19. Brewer's report of 9 cases of acute unilateral hemotogenous renal infection emphasizes the importance of this generally unrecognized condition. He describes 3 clinical types, — severe, intermediary, and mild, — dependent on the virulence of the infection and the rapidity of its progress. Sudden onset, with marked tenderness in the costovertebral angle, constitutes the fundamental clinical picture. [R. M. G.]

The Lancet.

May 30, 1908.

1. *Schäfer, E. A. *Oliver-Sharpey Lectures on the Present Condition of our Knowledge Regarding the Functions of the Suprarenal Capsules.*
2. *Bonney, V. *Hunterian Lectures on the Connective Tissue in Carcinoma and in Certain Inflammatory States that Precede its Onset.*
3. *Sinclair, W. J. *Analgesia v. Anesthesia in Obstetrics and Gynecology.*
4. Williamson, J. R. *Hemiatrophia Facialis Progressiva, or Facial Hemiatrophy. (Prosopodismorphœa; Aplasie Lamineuse Progressive.)*
5. *Wise, A. T. T. *Treatment of Pulmonary Tuberculosis by a Postural Method, Encouraging Drainage of the Lung and Inducing Artificial Hyperemia of the Apex.*
6. Hall, F. de H. *A Case of Enteric Intussusception.*
7. Young, C. W. *A Case of Pemphigus Vegetans.*
8. Hirsch, C. T. W. *Motoring Notes.*

1. Schäfer, in the first of the Oliver-Sharpey lectures on the functions of the suprarenal capsules, dwells briefly on the life of William Sharpey, and then somewhat at length on the history of the investigation of the suprarenal

capsules. Until recently there were three theories as regards these glands: (1) That they have no proper function and are important only from their close relation to the sympathetic; (2) that they are excretory glands, removing pigments and toxins from the circulation; and (3) that they are secretory glands, providing an internal secretion which is of use in the economy. At present the evidence is sufficiently strong to warrant the conclusion that the adrenal bodies are functional glands and that Addison's disease is due to an inadequate supply of the suprarenal secretion. He speaks at length on the structure and development of the suprarenal capsules and discusses the use of these glands.

2. Bonney, in the third and last of the Hunterian lectures on the connective tissue in carcinoma and in certain inflammatory states that precede its onset, takes up from this point of view carcinoma of the breast, of the intestine and of the esophagus. He considers the connective tissue in relation to advanced extensions of primary carcinoma and in relation to the lymphatic glands in connection with the disease. He concludes (1) that ordinary carcinoma is always preceded by a condition characterized by epithelial hypertrophy and certain changes in the sub-epithelial tissue; (2) that this state may be attained through various inflammatory processes at first quite distinct from one another, but culminating in the same histological picture; (3) that this tissue cell proliferation is part of the precarcinomatous process and materially assists the progress of the growth; (4) that there is no histological evidence of a protective reaction on the part of the tissues to the carcinoma cell; (5) though changes in the adjoining connective tissue bear some very close relation to the cause of epithelial ingrowth, yet malignancy having been established the further spread of the tumor is independent of such assistance.

3. Sinclair, in an article on analgesia versus anesthesia, in obstetrics and gynecology, speaks first of morphia and allied drugs; (2) on spinal anesthesia, which he condemns at once; (3) on morphium-scopolamine analgesia, which he does not believe can be recommended; (4) morphia-alcohol-cocaine method which he has used for several years with excellent results. The method he uses is as follows: about three quarters of an hour before operation the patient gets a full dose of morphia hypodermically, ¼ gr. more or less, according to her bulk. Half an hour before operation she receives 2 or 3 oz. fluid of whiskey or brandy disguised and diluted. If she is accustomed to alcoholic beverages she must get more. The patient is now quite apathetic and at the operation itself cocaine is used locally.

5. Wise, in the treatment of pulmonary tuberculosis, recommends the prone position in which the patient lies face down on a specially devised chair or couch, by means of which the head is the lowest part of the body. After a short training the patient becomes quite accustomed to this position and in addition to draining the bronchi and doing away with coughing, it has an invaluable effect in preventing engorgement of the diseased part of the lungs, and helping the healing process. In cases of recent hemorrhage he does not advise it. [J. B. H.]

British Medical Journal.

May 30, 1908.

1. *Schäfer, E. A. *Oliver-Sharpey Lectures on the Present Condition of our Knowledge Regarding the Functions of the Suprarenal Capsules.*
2. *Choksy, N. H. *On Recent Progress in the Serum-Therapy of Plague.*
3. Buchanan, A. *Cats as Plague Preventers.*
4. *Brahmachari, U. N. *Sporadic Kala-azar in Calcutta, with Notes of a Case Treated with Atoxyl.*
5. Ward, E. *On Measles.*
6. *Cumpston, H. *The Use of Serum in Scarlet Fever.*
7. Cameron, A. F. *Horse-pox Directly Transmitted to Man.*
8. Smith, A. *Primary Pneumococcic Peritonitis.*

1. See *Lancet* for May 30, 1908.

2. Choksy writes a very interesting article on recent progress in the serum-therapy of plague. His observations were restricted to the most acute cases within the first five days of illness, there being 238 cases in his series. In the hospital cases the mortality of those treated by the serum was 59.2%, this being 10.5% lower than the mortality of the non-treated cases. The influence of the serum among those patients who had previously been protected by Haffkine's prophylactic inoculation showed that the serum seemed to be considerably more beneficial after this protective inoculation. Among private patients the mortality of the serum treated cases was 40.7%. The main conclusion to be deduced from the study of the foregoing facts is that in anti-plague serum we possess a useful and efficacious remedy against the plague, although it has a very limited application. The whole secret of the treatment lies in applying the serum very early. If treated within the first few or even twenty-four hours the whole course of the disease becomes altered; after this it is not so well marked, and after the expiration of forty-eight hours it does not appear to influence the course perceptibly.

4. Brahmachari writes on sporadic kala-azar in Calcutta Kala-azar is a disease endemic around Calcutta caused by infection with the Leishman-Donovan bodies. During the last year he examined he splenic blood in nearly 150 cases of enlarged spleen and found the parasite of kala-azar in 60 cases. There are different types of cases, one in which there is a history of intermittent attacks of fever, quotidian for some time and later on becoming irregular, with or without chills, lasting for several months, and not benefited or only temporarily benefited by quinine. In the second class there is a history of a few previous attacks of fever with a steadily enlarging spleen. In the third class there is a history of attacks of low fever, continued for several months, with a progressive enlargement of the spleen. In the fourth class there is a history of one or two attacks of remittent fever more or less resembling typhoid. In the fifth class the patient gives a history of gastro-intestinal troubles, with dysenteric or diarrheic attacks followed by edema of the lower extremities and attended with ague-like attacks of fever. There is no benefit from quinine in all of these cases. There is in addition to a moderate diminution in the red corpuscles, a marked decrease in the whites, the average being something under 2,000. In cases where there is some complication the number of whites may reach normal. Prognosis is always grave and usually fatal. Atoxyl is borne in very large doses (15 gr.) by kala-azar patients. It is perfectly harmless and non-irritative. Its effect on the parasites is perhaps very slight. While improving the patient's health it does not remove the cause, although it has apparently some effect upon the pyrexia. In order that it may do any good it must be given in large doses as an injection every seven or ten days, continued for several months. [Recent reports have shown that atoxyl is by no means harmless, but may cause temporary or even permanent blindness and other outward symptoms.]

6. Cumpston has used anti-streptococcic serum in 42 cases of scarlet fever, and is of the impression that the injection of this serum in large enough doses, not less than 50 ccm. early in the disease, will produce a marked improvement in the septic type of cases. In those cases characterized merely by severe toxemia little can be said in favor of the use of the serum. [J. B. H.]

Deutsche Medizinische Wochenschrift. No. 20.

May 14, 1908.

1. Freund, W. A. *The Significance of Uterine Inertia.*
2. *Uhlenhuth and Weidanz. *Investigations on the Preventive Action of Atoxyl in Experimental Syphilis in Rabbits.*
3. *Albers-Schönberg. *The X-ray Appearances in Tuberculosis of the Apices.*
4. *Schlayer. *The Value of the X-ray in the Early Diagnosis of Tuberculosis of the Lungs.*
5. Meyer, K. *The Employment of the Method of Deviation of the Complement for the Diagnosis of Tuberculous Exudates.*
6. Dold, H. *Is Müller's Method for the Distinguishing of Tuberculosis from Other Pus by Means of the Millon Reaction Reliable?*
7. Fischler. *Where is Urobilin Formed?*
8. *Determann. *The Effect of Iodides on the Viscosity of the Blood.*
9. Notthafft. *A Case of Family Psoriasis.*

10. Kafemann. *A Description of the Pain in Perforation of the Appendix.*
11. Friedmann. *The Indications for the Induction of Abortion in Mental Diseases.* (Continued.)

2. Uhlenhuth and Weidanz, having previously shown that by injections of atoxyl beginning on the day of inoculation, the development of experimental syphilis in the ape may be with certainty prevented, extended their observations to experimental syphilis of the rabbit. This is produced by the inoculation of syphilitic material into the anterior chamber of the eye. A considerable time after the inoculation a specific keratitis develops in the majority of cases. The administration of atoxyl intravenously invariably prevented the development of syphilitic keratitis in 40 rabbits thus inoculated. Similar experiments with intravenous injections of corrosive sublimate failed to show any marked preventive action. They conclude that for the prevention of syphilis after inoculation atoxyl is far superior to mercury, and that if it could be stripped of its toxic properties for the host, it would be the ideal drug for the treatment of syphilis in man.

3. This article by Albers-Schönberg is a description by an authority of the technic to be employed in the x-ray examination of the apices. He also touches on the interpretation of x-ray plates of the apices and describes the sources of error. For the details the original article may be consulted.

4. Schlayer's valuable contribution demonstrates anew the extraordinary frequency of tuberculosis of the lungs. No less than 80% of 350 patients, in whom pulmonary tuberculosis was merely suspected, showed on x-ray examination undoubted signs of tuberculosis of the apices. Continued clinical observation, including tuberculin injections, showed, however, that only about two thirds of these patients had active tuberculosis. In the remainder the process was latent or already healed. There is no means of telling by means of the appearances in the x-ray plate whether a process is active or not. Moreover, in 6% of the total number, although the x-ray pictures were negative, tuberculosis was demonstrated with certainty, and in 6 of these cases the appearance of a local tuberculin reaction at one apex definitely showed the tuberculous process to be located at that place. The results of percussion in this series agreed in the main quite well with the x-ray findings, but were somewhat less accurate.

8. Determann estimated the viscosity of the blood after the administration of iodides, and found that, contrary to the experience of O. Müller and Inada, the viscosity was not reduced, but remained the same. He claims that his method is more accurate than that employed by the abovementioned authors, but further investigations will be necessary before this point can be decided. [W. T.]

No. 21. May 21, 1908.

1. Raecke. *The Diagnosis and Treatment of Mental Diseases in Childhood.*
2. Friedmann, M. *The Indications for the Induction of Abortion in Mental Diseases.* (Concluded.)
3. *Forschbach, J. *Parabiosis and Diabetes of Pancreatic Origin.*
4. *Baumann, W., and Groedel, F. M. *Two Cases of Pulmonary Disease after Trauma.*
5. *Gröndahl. *A Case of Intestinal Emphysema (Pneumatosis Cystoides Intestinorum).*
6. Gebele. *The Prognosis and Treatment of Appendicitis.*
7. Pawlowsky. *Acute Glossitis Due to the Staphylococcus.*
8. Kreibich. *Keratosis of the Skin and of the Cornea with Congenital Cataract.*
9. Napp, H. *The Use of Quinine in Syphilis.*
10. Schindler, C. *The Treatment of Diseases of the Nails by X-ray.*
11. Schmidt, H. E. *The Use of the Milliampèremeter in the Dosage of the X-ray.*

3. Sauerbruch and Heyde succeeded in joining together two animals in such a way that their peritoneal cavities communicated; the animals remained in life and there was free communication by means of blood vessels between them. To this condition they gave the name of parabiosis. Forschbach, after performing such an operation on dogs, extirpated later the pancreas of one of them, and found that in this way the occurrence of diabetes was prevented. Further researches are to be made in this direction.

4. This article is a report of 2 cases of disease of the lung following injury. The first was one of traumatic lobar pneumonia. In the second a hematoma of the parietal pleura resulted from fracture of the first rib near the shoulder joint. The clinical findings resembled those of pneumonia in the upper lobe, except for the absence of bronchial breathing.

5. Cysts of the intestine containing gas constitute a very rare condition in man, although more frequently met with in the hog. Gröndahl reports a case dying of hemorrhage from duodenal ulcer in which the lower part of the ileum was very thickly sown with small cysts containing gas, situated in the serosa and in the submucosa. This is the sixth case on record in man. All but one have shown ulceration of the gastro-intestinal tract, some lesion of continuity of which is probably a *sine qua non* for the development of the condition. The author regards it as due to an infection of the lymphatics with some gas-producing organisms. [W. T.]

Therapie der Gegenwart.
April, 1908.

1. Menge, C. *The Treatment of Chronic Endometritis.*
2. *Linser, P. *The Pathogenesis of Gout.*
3. Laguer, B. *Sanatorium Treatment of Drunkards.*
4. Finkelstein, H. *The Treatment of Scarlet Fever.*
5. Fischer, W. *The Wassermann Syphilis Reaction; Its Diagnostic and Therapeutic Value.*

2. Linser reviews the work of Schittenhelm and Brugsch on gout, in which they showed that the cause of gout is a disturbance of purin metabolism, characterized by an increased endogenous uric acid content of the blood and a much lowered excretion of uric acid in the urine, and by a disturbance of the metabolism of the exogenous uric acid, with a relatively increased excretion of purin bases. The author observed a man with gout who also had a severe and wide-spread chronic eczema. The patient was put on a purin-free diet (milk, eggs, white bread, butter and vegetables), under which the uric acid excretion fell to .16 gm. per day. The blood contained .0068 gm. uric acid to the 200 ccm. Then a daily x-ray treatment of the eczema was instituted. These treatments were carried out for six days. The leucocytes in the blood were increased from 9,600 to 15,000 during the first three days, returning to normal later. The uric acid in blood and urine rose, and ten days after the first x-ray treatment, in spite of the purin-free diet, a severe attack of gout appeared. After the patient had recovered from this, the x-ray treatment was resumed, with the same increase in uric acid, and nine days after the beginning of this second x-ray period, the patient suffered still another sharp attack of gout. His eczema being cured under the x-ray treatment, as soon as his second attack of gout had receded he was discharged from the hospital.

In reviewing the results here set down the author points out the now well-known fact that the x-rays cause an increase and subsequent breaking up of the leucocytes, with resulting increase in the amount of endogenous uric acid, as was seen in this case. Although the patient was gouty, there was an increased amount of uric acid in the urine, which is decidedly against Ganod's original theory of an impermeability of the kidney to uric acid in gout. It is also extremely suggestive that the patient, though on strict purin-free diet, had two acute attacks of gout, referable, without doubt, to the increase of uric acid set free by the action of the x-rays. [R. D.]

Deutsches Archiv für Klinische Medizin. 1908.
Band 92. Heft 5 and 6.

1. Schieffer. *The Influence of Occupation upon the Size of the Heart.*
2. Schieffer. *The Influence of Military Service upon the Size of the Heart.*
3. *Sick and Tedesko. *Studies of Gastric Motility with Particular Reference to the Distensibility of the Cardiac Portion of the Stomach.*

4. *Meyer. *Fermentative Intestinal Dyspepsia.*
5. *Schmidt. *Fecal Fermentation and the Application of Test Diets in a Study of Intestinal Function.*
6. *Hirschfeld. *The Experimental Production of Bone Marrow Atrophy.*
7. *Hoepffner. *Intravenous Strophanthin Therapy.*
8. *Wynhausen. *Bedside Study of the Morphology of the Blood.*
9. *Weitz. *Pressure in Pleural Effusions.*
10. *Weitz. *The Use of Tuberculin in Leukemia.*
11. Ziegler and Schlecht. *Leucocytotic Blood Changes in Infectious Diseases and Their Physiological Meaning.*
12. Gabriel. *Ring Bodies in Anemic Blood.*

3. Sick and Tedesko have studied in cats peristaltic motion in portions of the stomach wall and isolated muscle layers by the method of Magnus. In this work they have used stomachs entirely isolated from the body. They find the same forms of muscle contraction in the stomach as already described by others in the intestine. In the musculature of the fundus there are tonus contractions and also small pendulum motions. In the pyloric portion there are groups of stronger contractions coming at intervals of one to three minutes. Distention of the stomach acts as a stimulus to peristalsis. The sphincters remain contracted throughout the experiments whether the stomach is empty or filled. It is very rare to see a sphincter-like contraction at the boundary between the pylorus and fundus capable of separating the two portions. Dilute acids or alkalis in the duodenum have no influence upon the pylorus in the isolated stomach. The fundus portion of the stomach is capable of an active diastole with increase in volume. This dilatation with lower pressures exceeds the elastic distensibility of the dead stomach.

4. The clinical characteristics of fermentative intestinal dyspepsia are given by Meyer as follows: The condition is usually one of considerable duration. There are pains in the abdomen, frequently of colicky character. Stools are of the consistence of thick gruel, or of watery diarrheic character, and vary in frequency from one to ten daily. Sensations of distention, fullness, tenesmus, loss of appetite and nausea are common. Patients usually lose little weight and strength. A study of the gastric contents of these cases showed normal conditions five times, subacidity eight times, hyperacidity twice. The feces usually contain gas bubbles and are of a bright yellow color and acid reaction. Microscopically they usually show undigested starch residues. The condition rapidly improves with reduction of the carbohydrate part of the diet. Meyer considers the condition to be the result of a secretory insufficiency of the glands of the small intestine, chiefly functional in character. This condition sometimes may be the result of a primary disturbance of the stomach. There is deficient digestion of starch and the increased starch forms a favorable culture medium for fermentative bacteria. The growth of these leads to the formation of gas and organic acids, which stimulate and increase the motor activity of the intestine, and in cases of considerable duration lead to secondary inflammatory conditions. After a reduction of carbohydrate diet is instituted, a tolerance for carbohydrates may be gradually acquired very similar to that acquired in diabetics after dietary treatment. It is interesting in this connection that potatoes appear to be a carbohydrate particularly difficult of digestion in these cases, and consequently their omission from the diet list is very important.

5. Schmidt adds some general remarks on the subject of intestinal fermentation and test diets, and confirms the results given in the previous paper. He cautions against too broad deductions from single tests of fermentation and gas production in a specimen of stool. In this paper Schmidt gives a modified test diet, which is not so rigidly limited as was the first one described by him. This diet is more easily prepared and allows of a certain variation to suit the individual tastes of the patient.

6. In an earlier number of this journal (Heft 1 and 2, Vol. xcii) Blumenthal and Morawitz have described the production of atrophic changes in the bone marrow induced by hemorrhage and under-nutrition. Hirschfeld has obtained quite similar results in rabbits from the use of a typhoid toxin.

7. In this journal (Heft 3 and 4, Vol. xcii) Lust reported some results of intravenous strophanthin therapy. Hoepffner here reports its use in 34 cases, in which he obtained results which would seem to justify its more extended use. Some of the earlier unpleasant consequences, such as a severe chill soon after the use of the drug, Hoepffner shows to have been the result of impurities, and these have been eliminated from the drug by a more careful preparation.

8. This is a study of the morphology of the blood in some cases of scurvy, infantile anemia and atypical leukemia with some discussion of the conditions found.

9. Weitz records the intra-pleural pressure in a long series of cases of pleural effusion. He believes that the determination of the pressure, which he accomplishes by a very simple means, is of practical importance in determining the correct point to stop the withdrawal of fluid. A negative pressure of 11 ccm. is this point in medium and smaller exudates, whereas the zero point marks the limit in large effusions, particularly in patients with heart disease.

10. It has been observed that not infrequently in leukemia an intercurrent infection causes an improvement in the leukemic condition. It has been noted in Quincke's clinic at Kiel that tuberculosis sometimes exerts such an influence. For this reason tuberculin has been given therapeutically in several cases of leukemia. Weitz reports these results and apparently shows that tuberculin injections produce a temporary improvement in the leukemia, but after a time this effect is lost, probably because a certain immunity to the tuberculin is acquired.

[H. A. C.]

Correspondence.

A REFERENCE TO THEODORE TRONCHIN.

Boston, July 10, 1908.

Mr. Editor: In the address of Prof. F. C. Shattuck at the Association of American Physicians of May 13, 1908, he deplores the absence of any reference to Theodore Tronchin in the Encyclopedia Britannica and in the Century Dictionary. I take the liberty to send you the reference to him and his works from an extensive biographical work I have, but of which I have never chanced to see another copy. This shows that at least one authority appreciated Professor Tronchin as Professor Shattuck seems to do.

"Tronchin, Theodore, a physician, was born at Geneva, in 1709. His father, having crippled his fortunes in the Mississippi speculation, sent his son to England to push his fortunes under Lord Bolingbroke, to whom he was in some degree related. He commenced his studies at Cambridge, but choosing medicine as his profession, he went to Leyden, and entered under Boerhaave. He settled as a physician at Amsterdam, where he obtained the appointment of Inspector of Hospitals. Having married a lady who was related to John DeWitt, and having formed strong opinions in favor of a purely republican form of government, he left Amsterdam and returned to Geneva, where he was chosen honorary professor of medicine. Tronchin has the merit of having introduced the practice of inoculation into Holland and Geneva. In 1756, he was called to Paris to inoculate the children of the Duke of Orleans. The operation proved successful, and it paved the way to wealth and honors. In 1765 he inoculated the children of the Duke of Parma, who named him his first physician. He finally settled in Paris as Physician to the Duke of Orleans in 1766, where he made an extensive and lucrative practice. He died there on Nov. 30, 1781. Tronchin's success was due to his practical ability, combined with an exceedingly pleasing exterior and manners. He published two theses, 'De Nympha,' Leyden 4°, 1736; and 'De Colica Pictonum,' Geneva, 1757. He also published some observations on ophthalmia and hernia in the Memoirs of the French Academy of Surgery and an edition of the works of Baillou."

(The Imperial Dictionary of Universal Biography. London, Glasgow and Edinburgh.) No date.

Truly yours,
Albert N. Blodgett, M.D.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JULY 4, 1908.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	4	2
Chicago	—	—	Waltham	—	—
Philadelphia . . .	—	—	Pittsfield	4	2
St. Louis	—	—	Gloucester	4	2
Baltimore	244	108	Brookline	5	—
Cleveland	—	—	North Adams . .	4	3
Buffalo	—	—	Chicopee	14	6
Pittsburg	—	—	Northampton . .	2	0
Cincinnati	—	—	Medford	3	—
Milwaukee	—	—	Beverly	7	1
Washington . . .	—	—	Leominster . . .	—	—
Providence . . .	46	16	Hyde Park . . .	5	0
Boston	196	56	Melrose	0	—
Worcester	40	13	Newburyport . .	—	—
Fall River	—	—	Woburn	1	—
Cambridge	23	4	Westfield	1	—
Lowell	44	18	Marlboro	4	0
Lynn	17	2	Revere	2	—
New Bedford . .	27	12	Attleboro	3	0
Springfield	18	5	Peabody	—	—
Lawrence	18	7	Adams	2	2
Somerville	19	6	Clinton	—	—
Brockton	6	1	Gardner	1	1
Holyoke	12	8	Milford	—	—
Malden	16	2	Watertown . . .	4	1
Chelsea	7	2	Plymouth	—	—
Newton	9	1	Weymouth . . .	4	0
Salem	10	2	Framingham . .	2	1
Haverhill	16	3	Southbridge . . .	1	—
Fitchburg	7	3	Wakefield	—	—
Everett	6	1	Webster	—	—
Taunton	8	1	Arlington	—	—

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING JULY 11, 1908.

(Orders issued by commanding general, army of Cuban pacification.) A. H. ALLEN, assistant surgeon. Camp Columbia, Cuba, will proceed to Sancti Spiritus, Cuba, for duty, relieving Assistant Surgeon E. C. White. E. C. WHITE, assistant surgeon. Relieved from furthur duty in Cuba and ordered to comply with Navy Department orders of May 29. E. H. H. OLD, assistant surgeon. Detached from the Naval Hospital, Cavite, P. I., and ordered to Washington, D. C., for examination for promotion and then to wait orders.

E. M. BLACKWELL and J. J. SNYDER, surgeons. Commissioned Surgeons from March 4, 1908.

P. R. STALNAKER, passed assistant surgeon. Commissioned Passed Assistant Surgeon from May 3, 1908.

F. W. SMITH, assistant surgeon. Detached from the "Wisconsin" and ordered to report to the Commander, Third Squadron, Pacific fleet, for duty.

F. X. COLTES, assistant surgeon. Detached from the "Connecticut" and ordered to report to the commander, Third Squadron, Pacific fleet, for duty.

J. FLINT, assistant surgeon. Detached from the "Wilmington" and ordered to the "Connecticut."

E. O. J. EYTINGE, assistant surgeon. Detached from the "Concord" and ordered to the "Illinois."

M. E. HIGGINS, assistant surgeon. Detached from the "Illinois" and ordered to report to the commander, Third Squadron, Pacific fleet, for duty.

C. K. WINN, assistant surgeon. Detached from the "Villalobos" and ordered to the "Missouri."

J. M. STEELE, medical inspector. To be placed on the retired list Sept. 18, 1908, after completion of thirty years' service, in accordance with a provision contained in the naval appropriation act of May 13, 1908.

J. L. TAYLOR, passed assistant surgeon. Commissioned Passed Assistant Surgeon from Dec. 17, 1907.

W. L. MANN, JR., acting assistant surgeon. Appointed an Acting Assistant Surgeon from July 1, 1908.

L. W. BISHOP, passed assistant surgeon. Detached from the Naval Recruiting Station, Indianapolis, Ind., and ordered to the Naval Recruiting Station, Denver, Colo.

C. N. FISKE, passed assistant surgeon. Ordered to the Naval Recruiting Station, Boston, Mass., and to additional duty in attendance upon officers of the Navy and Marine Corps residing in Boston, not otherwise provided with medical attendance.

BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

A board of commissioned medical officers will be convened to meet at the Bureau of Public Health and Marine-Hospital Service, 3 B Street S. E., Washington, D. C., Monday, Sept. 14, 1908, at 10 o'clock A.M., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health and Marine-Hospital Service.

Candidates must be between twenty-two and thirty years of age, graduates of a reputable medical college, and must furnish testimonials from responsible persons as to their professional and moral character.

For further information, or for invitation to appear before the Board of Examiners, address, Surgeon-General, Public Health and Marine-Hospital Service, Washington, D. C.

APPOINTMENTS.

THE following are some of the more important nominations recently sent by Governor Guild of Massachusetts to the Executive Council: Dr. Timothy Leary, of Boston, associate medical examiner of Suffolk County. In making this appointment, the following statement was given out: "The appointment of Dr. Timothy Leary as associate medical examiner in Suffolk County is in line with the governor's appointment last year of Dr. George H. Magrath. The demands of a great metropolis every year make it more and more important that this department of public service should have the benefit of expert knowledge in pathology and bacteriology. The appointment of Dr. Leary was strongly urged on these grounds by leading members of The Massachusetts Medical Society, and especially by physicians identified with the public service." Dr. Joe V. Meigs, of Lowell, medical examiner of the fifth Middlesex District. Dr. Charles W. Milliken, of Barnstable, Mass., medical examiner, Second Barnstable District. Dr. Frederick H. Thompson, of Fitchburg, medical examiner for third district of Worcester County.

SOCIETY NOTICES.

FIFTH PAN-AMERICAN MEDICAL CONGRESS.—It is announced that the Fifth Pan-American Congress will meet at Guatemala from the 5th to the 10th of August. A number of scientific papers have already been offered by Americans. Certain mistakes have been made in the publication of transportation figures. Dr. H. L. E. Johnson, of Washington, is the chairman of the committee on transportation and from him needful information may be obtained.

INTERNATIONAL CONGRESS ON ELECTROLOGY AND RADIOLOGY.—The fourth International Congress on Electrology and Radiology will be held in Amsterdam from Sept. 1 to 5, 1908. In conjunction with the congress an exhibition will be arranged of apparatus used in clinical and laboratory work and also a collection of important radiographs.

RECENT DEATHS.

JOHN GILMAN MCALLISTER, M.D., M.M.S.S., died in Lawrence, June 20, 1908.

DR. JAMES HOFFMAN, of Jersey City, N. J., died suddenly at Newfoundland, N. J., on July 8.

DR. ALLAN CLARKE HUTTON, of New Brunswick, N. J., died at Twilight Park, in the Catskill Mountains, on July 7, from cardiac disease. He was sixty-seven years of age, and for a number of years was one of the leading physicians of New Brunswick. For some time past he had devoted his attention largely to philanthropic work.

BOOKS AND PAMPHLETS RECEIVED.

Handbook of Medicine and Therapeutics. By Alexander Wheeler, L.R.C.P. & S. E., and William R. Jack, B. Sc., M.D., F.F.P.S.G. Third edition. New York: William Wood & Co. 1908.

The Book of Prescriptions (Beasley). Rewritten by E. W. Lucas, F.I.C., F.C.S. With an introduction by Arthur Latham, M.A., M.D., F.R.C.P. Ninth edition. Philadelphia: P. Blakiston's Son & Co. 1907.

Borderland Studies. Miscellaneous Addresses and Essays Pertaining to Medicine and the Medical Profession, and Their Relations to General Science and Thought. By George M. Gould, M.D. Vol. II. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1908.

The Treatment of Gonorrhœa in the Male. By Charles Leedham Green, M.B., F.R.C.S. Second edition. Illustrated. New York: William Wood & Co. 1908.

Physical Signs of Diseases of the Thorax and Abdomen. By James E. H. Sawyer, M.A., M.D. Oxon., M.R.C.P. Lond. New York: William Wood & Co. 1908.

Sex of Offspring. A Modern Discovery of a Primeval Law. By Frank Kraft, M.D., Cleveland, Ohio. B. Barsuette. 1908.

Original Articles.

THE DIAGNOSTIC AND THERAPEUTIC USE OF TUBERCULIN.*

BY LAWRASON BROWN, M.D., SARANAC LAKE, N. Y.

THE DIAGNOSTIC USE OF TUBERCULIN.

The use of tuberculin for diagnosis in tuberculosis, though suggested by Koch in one of his first papers, was for some time completely overshadowed by the great possibilities that Koch claimed for its therapeutic use. Following the period of ".tuberculin delirium," tuberculin was seldom used and was long regarded as highly dangerous. Had it not been for Trudeau, Osler, and a few others who boldly put into practice their belief in its diagnostic value, tuberculin would have been laid aside in this country as fully as it was in England. The paramount necessity of making an early diagnosis in pulmonary tuberculosis has emphasized the value of every test which offers us the slightest help. In Germany, the sanatoriums have been filled with patients in whom the diagnosis of tuberculosis depended in many instances upon the results of the tuberculin test. However, some suspicion and fear about this test has lurked in the minds of many men, but these, almost without exception, are those who have made but little or no use of it. As I have said, this is true of many physicians in England, and particularly true of the medical profession in France. All these men, however, were forced to recognize its great value in tuberculosis in cattle, and many are coming slowly around to the position that the subcutaneous use of tuberculin for diagnostic purposes is attended with far less serious consequences than the failure to make an early diagnosis. When late in 1906 von Pirket began to write about the cutaneous test, and particularly when Wolff-Eisner in May and Calmette in June of last year advocated the instillation into the eye, of weak dilutions of tuberculin, the opponents of the subcutaneous method, realizing the great value of tuberculin as a diagnostic means, were ready to test fully these methods.

THE CUTANEOUS METHOD.

The cutaneous method consists in putting a drop of diluted old tuberculin, preferably 25%, upon the skin, and then with a lancet, quill or von Pirket's "scratcher" (Schaber), a slight abrasion of the skin under the drop of tuberculin is made. Only the most superficial layers of the epithelium need be removed as it is only necessary to open the superficial lymph channels, and it is unnecessary and even undesirable to draw blood. The technic to be employed is practically the same as that used in vaccination against smallpox, and the dangers of secondary infection are exceedingly slight. At a distance of about one inch a control abrasion should be made under a drop of 50% glycerin and .1% phenol in physiological saline solution. Care should be exercised not to carry tuberculin on the instrument to the control, and where large numbers of patients are vaccinated a platinum-iridium instrument that can be heated has been advised. Both places at first become slightly red and then normal in color. The reaction, Wolff-Eisner thinks, should be separated into three great classes: first, what he terms the normal reaction of the tuberculous individual; second, the late reaction, each of which may be marked, strong or unusually strong; and third, the quick, but very weak and fleeting reaction, often overlooked [first, favorable (more so if stronger), third unfavorable, second fully inactive]. The early reaction begins in about three hours with slight redness which in twenty-four hours reaches its height and in forty-eight hours has markedly retrograded. In a comparatively few hours a slight elevation or papule appears which is more apparent to the touch than to the sight. In some instances it takes the form of a wheal which later changes into a papule. In rarer instances a bleb, small vesicles or a form of herpes may occur.

In the late reaction the intensity increases each day to the fourth or, indeed, it may only begin on the third or fourth day, and may persist for three or four weeks. The papule is firmly indurated and may suggest the post-mortem tubercle.

A slight staining of the skin remains afterwards in each case and the subjective symptoms are usually very slight. The patient may feel that something is wrong with his arm and it may itch. Lymphangitis may occur and the glands in the axilla may become slightly tender when the vaccination is made on the arm.

THE CONJUNCTIVAL METHOD.

The ophthalmic, or (as Wolff-Eisner thinks that we should call it, and he has considerable right upon his side) the conjunctival test, is even more simple in its technic than the cutaneous test. It consists in putting a drop of a 1% solution of old tuberculin, prepared freshly every eight days, into the eye. The patient should hold the head well back and the lid should be held down for one-half minute after the tuberculin has been dropped on the lower lid. It is better if possible to warm the tuberculin but this is not necessary. The patient should be warned not to wink and not to close his eye until absolutely necessary. He should not rub it. In children the occurrence of lachrymation may wash out a large amount of the tuberculin. Calmette has used a 1% solution of purified tuberculin. This solution is too strong and has caused some unpleasant consequences. If the precipitated tuberculin be used it is much wiser to use at first a 1 : 250 solution in one eye and if this cause no reaction then to employ a 1: 100 solution in the opposite eye. The dose should not be repeated in the same eye. In six to twenty-four hours the conjunctiva becomes slightly reddened. Many observers have noticed that this begins first and often occurs more intensely about the caruncle, but Wolff-Eisner has not observed this, though he thinks, however, that theoretically it should take place. The reaction may vary considerably in degree. Reddening of the palpebral and slight reddening of the ocular conjunctiva is the most usual occurrence, but the reddening may be more intense with a mucofibrinous exudate. In a few instances all these symptoms are more pronounced and even a slight ecchymosis may occur. A strong reaction is accompanied with itching, a feeling as if a foreign body were in the eye and at times with some photophobia, but usually these symptoms are very slight and may be readily controlled by the use of a boric acid solution containing a little camphor water, or a drop or two of a 3% solution of cocaine, either alone or with a drop of a solution of adrenalin, 1: 1,000. After the conjunctival test a few general reactions have been observed. The redness of the conjunctiva usually disappears in twenty-four to forty-eight hours, but may persist for several weeks, and recur when tuberculin is administered subcutaneously.

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* Read at the meeting of the Suffolk District Medical Society in conjunction with the Boston Medical Library, March 18, 1908

THE SUBCUTANEOUS METHOD.

The introduction of the conjunctival and cutaneous tests will force us to change our nomenclature in regard to the tuberculin test. We shall now have to speak of the tuberculin test as conjunctival, cutaneous, subcutaneous and possibly dermic. The latter method has been the form that has been most extensively used. Koch's original tuberculin should always be employed for the subcutaneous test as it is the form of tuberculin about which we know most. It should be recalled, however, that even this form cannot be accurately standardized. The dose required to produce a reaction in a healthy individual is very difficult to ascertain, but Koch has stated that 10 mgm. never produces a typical reaction in a normal person. The interesting work of Schreiber, who in forty newborn infants failed to get a reaction to 50 mgm. of tuberculin, suggests that even to the subcutaneous test an individual who has never been injected with tubercle bacilli would not react or else that the mechanism of the infant in regard to tuberculin is differently constituted from that in the adult.

The method that has given me the greatest satisfaction is first to give an injection of physiological saline solution and then, if the patient fails to react, to give ½, 1 and 5 mgm. in three and four day intervals. Since I have been using this method I have found that all patients have reacted to 5 mgm. or less. A repetition of a small dose several times, as suggested by Loewenstein, does not produce a reaction in all tuberculous patients, and considerably prolongs the ordeal. The tuberculin is usually given at night, and in the majority of instances the reaction occurs eight to twenty hours later. In a few it may occur as early as four or five hours, and it cannot be denied that slight reactions which occur as early as this may fail to cause the patient a restless night, and consequently be overlooked, but I cannot believe that this occurs frequently. A reaction may take place, especially during tuberculin treatment, as late as the second or third day, and for this reason it is unwise to inject the tuberculin oftener than every three days. A typical reaction consists of pain, tenderness, redness and swelling at the site of injection, headache, malaise, an increased tendency to cough, possibly more or less expectoration than usual, some oppression in the chest or pleurisy, and, at times, some gastrointestinal symptoms, such as nausea and vomiting. Some elevation of temperature is rarely absent, though I do not believe that it is absolutely necessary to have a rise of temperature if the other symptoms are characteristic. In some instances rise of temperature occurs alone and should reach 1½° to 2° at least to be characteristic. The absence of any change in the physical signs in the lungs is no proof that a reaction has not occurred, but the occurrence of such a change points conclusively to a pulmonary infection. If an indefinite reaction occur it is wise to repeat the last dose which may be given sooner than I have mentioned. When the larger doses of tuberculin are given the reaction must be absolutely typical. Early non-acute cases of tuberculosis always react to the smaller doses. The day after the injection of tuberculin it is the practice of many physicians to keep the patient in bed, but theoretically, the patient should be under the same conditions before and during the test. Consequently, for some months I have not confined the patients to whom I have given tuberculin to bed but have cautioned them about over-exercise and allowed them to be up and about. The danger of over-exercise is the production of a severe reaction.

CONTRA-INDICATIONS.

Cutaneous test.— There are, as far as I know, no contra-indications to the use of the cutaneous test.

Conjunctival test. — According to many authorities, this test should be used only when there is no history of any inflammatory disease of either eye. Conjunctivitis, however, Wolff-Eisner believes, is only of importance in that it masks the reaction, but many authors do not agree with him. Iritis and tuberculous changes of the inner eye are absolute contra-indications. Wolff-Eisner believes that if used, it should be given in a dilution of 1: 100,000. Great caution should be exercised in the use of this test in children with scrofula, for phlyctenular conjunctivitis and keratitis have occurred. The test is not devoid of all danger as a case which has recently been reported in the BOSTON MEDICAL AND SURGICAL JOURNAL by Mackay shows. In this case a 1% solution of precipitated tuberculin was used, and ten weeks after the test and following severe conjunctivitis, there was still "a little redness of the conjunctiva with slight photophobia resulting in some narrowing of the palpebral fissure."

Subcutaneous test. — The subcutaneous method should not be used when a patient's oral temperature reaches 100° at any time during the day. When the physical signs are extensive or when great dyspnea, recent hemoptysis, within a month, general glandular involvement, meningitis, heart disease, nephritis or epilepsy are present it should not be used, though exceptions under certain conditions may be made when the nephritis is slight or if a very small dose be used in general glandular involvement. It is wiser to avoid the use of tuberculin for two or three weeks after a febrile attack of unknown cause, and in some hysterical patients an injectio vacua will produce a rise of temperature.

Comparative value. — The comparative value of the three tests is difficult to determine at present. Some observers have obtained a reaction to the cutaneous test in three fourths of all individuals, though Wolff-Eisner has been unable to obtain it in more than one half, and criticizes the results of others. It has been definitely shown by von Pirket and others from autopsy records that the percentage of reactions to the cutaneous test follows very closely the incidence of tuberculosis in children. Rarely present at first, it increases up to nearly 70% between the tenth and the fourteenth years, and inasmuch as the Hamburg autopsy records show latent and active tuberculosis to be present in about 72% of patients at this age, it is seen that the cutaneous test reveals very accurately the presence of both active and latent tuberculosis. Inasmuch as we know that a large percentage of all mankind have or have had at some time a tuberculous infection, and furthermore inasmuch as it is of little or no clinical significance to know that an inactive encapsulated tuberculous lesion that has been latent for years is present in the body, it appears that the cutaneous test alone is of little practical value.

The conjunctival test occurs in but one sixth of all individuals tested, and according to Wolff-Eisner reveals only active or "half-active" lesions. The autopsy statistics uphold this statement. Why the conjunctiva should react differently from the skin can be explained by the difference in the length of time the tuberculin is in contact with the part, for it is readily and rather quickly carried off through the tear duct.

The value of the subcutaneous method is more difficult to determine. Undoubted proof exists that none of these methods produce reaction in all cases of tuberculosis, and a number of observers have suggested prognostic data which are based upon this failure to react. As has been stated previously, early cases of tuberculosis react to smaller doses of tuberculin, and it is an interesting fact that the opponents of the subcutaneous method have been able to produce so few authenticated instances where post-mortem examination revealed no tuberculosis after a positive tuberculin reaction. The observations of Warthin, who has proved that only by microscopical examination can tuberculosis be excluded, have made it difficult to prove that reaction to tuberculin ever occurs in any patient who has not had a tuberculous infection. Without doubt the subcutaneous method, when a dose of 8 to 10 mgm. is given, causes a number of patients who have more or less inactive tuberculosis to react. The results of Franz with apparently healthy army recruits has undoubtedly shown that a large number of latent lesions do react to tuberculin. You will recall that three fifths of the individuals that he tested reacted. This figure closely coincides with the number of reactions following the cutaneous test. It is interesting, on the other hand, to compare the results obtained by Raviart who obtained a reaction to the conjunctival test in 43% of 623 patients in the hospital for the insane with the results obtained by Madison at Danvers, who noted a reaction to the subcutaneous tuberculin test in 40% of 400 consecutive insane patients. Madison's patients were all women and he used up to 10 mgm. of tuberculin.

From what has been said it appears to me that in many instances the properly applied conjunctival test will reveal a lesion of tuberculosis as accurately as the subcutaneous method, but that we have no reason to suppose that the subcutaneous method betrays a latent inactive encapsulated lesion of no clinical significance any more frequently than the conjunctival test. I have mentioned a number of circumstances, for example, conjunctivitis, iritis, and tuberculous lesions of the eye, in which the conjunctival test is contra-indicated. In all such patients we shall still have to depend upon the subcutaneous method. I have used it in a large number of cases for eight years, and I have yet to see, as a consequence, anything more than a slight temporary untoward result.

After the consideration of these three methods it seems to me that where time is not a very important factor the best course for us to pursue when we wish to apply the tuberculin test to a patient presenting suspicious symptoms or physical signs of tuberculosis, is first to use the cutaneous test, and if he fail to react to this we can with some degree of certainty attribute his symptoms to some other disease. If he react we can then use either the conjunctival, when no contra-indications exist, or the subcutaneous method, in which I must confess, I have still greater confidence. Another plan, suggested by Wolff-Eisner, is to use first the conjunctival test and then if no reaction occur, due either to faulty technic or to the absence of an active lesion, to apply the cutaneous test, which acts as a control. If this fail, the patient, he thinks, may be said to be free from tuberculosis, but if it be positive, a second conjunctival test in the opposite eye should be used. A third method of procedure which I believe should be used only when time is pressing, is to apply both conjunctival and cutaneous tests simultaneously. I feel that the conjunctival test, like the subcutaneous test, should be used only when all other means of diagnosis have been exhausted and that, as far as danger is concerned, I should be willing to submit as readily to the one as to the other, preferring, as I have stated above, the subcutaneous test. I must confess that I still hesitate to say that a patient does not react to the tuberculin test until the subcutaneous test has been found negative.

There are many points that I have not touched upon to-night that I hope will come out in the discussion.

THE THERAPEUTIC USE OF TUBERCULIN.[1]

Since Koch first announced his discovery of tuberculin in 1890 a few men have continuously employed the various forms of tuberculin in the treatment of pulmonary tuberculosis. To the moderate but strongly grounded faith in tuberculin that Dr. Trudeau has manifested for many years, in spite of the fact that some of his co-workers frequently urged him to discontinue its use, we owe to-day the widespread use of tuberculin as a therapeutic agent in America.

THE VARIETIES OF TUBERCULIN.

When it is realized that nearly sixty forms of tuberculin have been prepared some idea of the amount of work that has been done along this line of treatment in tuberculosis can be obtained. The vast majority, however, of these forms have been very little used clinically. The old tuberculin, originally proposed by Koch in 1890, is still used extensively to-day, and while all these varieties have been suggested many still report better results with this original tuberculin, which is really a heated glycerin-bouillon extract of the tubercle bacillus. A second tuberculin proposed by Koch, Tuberculin R., is the form of tuberculin that Wright and his followers have been using in England, controlling the doses by a study of the opsonic index. Koch stated that it contained 10 mgm. of solid substance in each cubic centimeter, but in reality, as Ruppell has recently pointed out, it contains but 2 mgm. The 10 mgm. was the amount of the solid substance that was used in its preparation, for if one evaporates the finished product it is found that each cubic centimeter contains but 2 mgm. The mistake that Wright has recently made in basing his dosage on the fact that it contains 10 mgm. of solid substance instead of 2 mgm. is the mistake that has been frequently and widely made through the inexact description of its preparation. The Bacillen Emulsion, a third variety of tuberculin, advocated by Koch, consists of a .5% emulsion of living, virulent, pulverized tubercle bacilli, in a 50% solution of glycerin in water. More recently a filtrate through porcelain of bouillon upon which tubercle bacilli have grown has been warmly advocated by Denys. Spengler has stated that this was the original tuberculin that Koch used and later discarded when he made old tuberculin. Spengler himself has concentrated this broth filtrate, heating it only to a low temperature, and advocates this variety of tuberculin very strongly. Denys thinks that this form of tuberculin is 10 to 100 times stronger (more toxic) than old tuberculin, but Baldwin has shown that old tuberculin is far more toxic for guinea pigs. The split products which Vaughan has obtained from the tubercle bacillus are certainly very interesting. He thinks that the non-toxic part may produce within the organism an increased bacteriolysis of the tubercle bacillus. He has not yet, however, definitely proved, as far as I know, that this non-toxic product is specific. The criticism that the various emulsions first contained living tubercle bacilli was undoubtedly justified, for Trudeau and Baldwin found living bacilli in Tuberculin R., and Thellung and von Meissen in Bacillen Emulsion. The various preparations of von Behring have never been fully described and have not met with extensive use.

Great difficulty has been experienced in standardization of tuberculin, and even to-day there is no accurate method of standardization. Its toxin varies in strength even when prepared from the same tubercle bacillus, grown on the same media under exactly the same conditions, and consequently when changing from one brew to another the dose should be reduced. The chemistry cannot of course be gone into, but it may be stated that nearly all of the tuberculins contain a greater or less quantity of the specific nucleic acid.

METHODS OF ADMINISTRATION.

Tuberculin has been administered in every way in which it is conceivable to get it into the body. The method first suggested by Koch was by subcutaneous injection. More recently when he wished to obtain a high agglutinating power in the serum he gave bacillary emulsion intravenously. Few others have employed this method.

Tuberculin has been given by mouth in the form of keratin coated pills after neutralization of the juices of the stomach with the bicarbonate of soda. Others have taken no cognizance of the peptic digestion in this form of administration. The work of Calmette and some of his assistants has shown that partial immunity in calves may be obtained by the use of tuberculous milk, and Ravenel and others have shown that tubercle bacilli in emulsions of fats are rapidly absorbed in the dog. The results, however, of oral administration are very unsatisfactory and the dosage is inexact. The same objections may be advanced against administration by inhalation. Spengler advocates the use of a percutaneous method in cases where hypersusceptibility is present, but this method is hardly necessary, for tuberculin can be given in such dilutions as to avoid all reaction. The rectal and intra-pulmonary injections of tuberculin cannot be recommended.

Subcutaneous injection still stands to-day, as at first, the most exact and most efficient method of administration of tuberculin. While a few advocate the injection of tuberculin in the neighborhood or into tuberculous foci no proof has been adduced to show that such a procedure is of any advantage and, in fact, there are some theoretical objections to it.

Nearly every form of tuberculin must be diluted to enable one to measure the small doses that must be used at first. The best diluent is .25% carbolic acid in physiological salt solution. This may be used for emulsions, though Koch recommended that only salt solution be used for this form of tuberculin. The high dilutions should not be kept over two weeks and are best preserved on ice in a dark place. I will not go into the details of dilutions but would like to add that the absolute dose any patient is getting of tuberculin is far less important than the relative dose. For this reason a syringe may be used for making the dilutions providing that the same instrument be always employed. In passing, I might speak of the syringe which has been made for me by a Boston firm and is divided into hundredths of a cubic centimeter. The needle is the finest that can be procured, and as a practical point, I would suggest to you that after using it you rinse it out with alcohol, lay it aside and use it for no other purpose. The syringe should be boiled before using. [I will pass around a schema which is used at the Adirondack Cottage Sanitarium in the preparation of the dilutions of tuberculin.] Rubbing the skin vigorously with a piece of cotton or a clean towel with 95% alcohol is all that is necessary. The tuberculin should be given well under, not in the skin nor in the fascia. It is best given 4 to 8 cm. from the spine in the lower interscapular region or below the angle of the scapula. The sites of former injections should be avoided. When the physician administering tuberculin is or has been tuberculous, he should avoid freeing his syringe of bubbles of air by squirting some of the tuberculin into the air, and he should also wash his hands carefully after administering tuberculin, otherwise he may react.

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[1] Dr. Brown has contributed a chapter on this subject to a work on Tuberculosis, edited by Dr. Arnold C. Klebs, and to be published by D. Appleton & Co.

DOSAGE AND INTERVAL.

The most important point in the successful treatment of tuberculosis by tuberculin lies in the selection of the proper dose and interval. The unfortunate accidents, indeed, I might say fatalities, which occurred at first were due to too frequent and vastly too large doses. During the period of tuberculin delirium a patient often received 1 mgm. and on the following day, in spite of the fact that he had a severe general and local reaction, in spite of the fact that his temperature reached 104°, he was frequently given another dose. This method was continued in a number of cases until the patient died. As I said a little while ago, the absolute dose of tuberculin is far less important than the relative dose. The most important point in regard to the beginning dose is that it shall be of such a size that it will produce no symptoms whatsoever in the patient. If there is any doubt about this it should be repeated several times. Patients vary greatly in susceptibility to tuberculin, a variation which Sahli states lies between 1 and 10,000. Tuberculin is usually given twice a week, but I am firmly convinced that this depends in a number of cases more upon the convenience of the physician who administers it than upon any other reason. I do not believe that it should be given more frequently than twice a week and that is the interval that I have usually employed, but whether as good or even better results would not be obtained with longer intervals is impossible to say. Both the beginning dose and the interval have been directly affected by the idea that many physicians have that a certain dose must be reached. How this came about is difficult to understand. It is well recognized that individuality of idiosyncrasy plays an important part in the dosage of all drugs. I have told you how the individual varies in regard to his susceptibility to tuberculin, and I am firmly convinced that we should not allow a question of the final dose to exert any influence upon either the interval or the beginning dose. When it is realized that a delayed reaction may not take place until sixty hours after the administration of tuberculin it is clearly seen why tuberculin should not be administered at intervals of less than three days. The increase of the dose has really divided the tuberculin camp into two sections; one headed by Wright insists that the increase of the dose, except to a certain very small quantity, is not necessary. In other words, it strives to produce an immunity which is indicated not by the patient's resistance to tuberculin but by the power of his leucocytes to phagocyte tubercle bacilli. The other camp strives to produce immunity to tuberculin claiming that if a patient can be immunized to tuberculin his cells will be able to resist, to engulf and finally to overcome the tubercle bacillus more readily. There are some very interesting facts to be presented on both sides. I cannot go into them to-night, but I shall simply say that in the guinea pig phagocytosis of the tubercle bacillus occurs very readily and that in this animal this phenomenon may explain why the guinea pig is so susceptible to tuberculosis, for when a cell has once engulfed a tubercle bacillus it may wander to some distant part of the body and dying there set free the tubercle bacillus which has been but little affected by its sojourn in the cell. On the other hand it is also of interest to note that guinea pigs are very insusceptible to tuberculin and that the tuberculin immunity which can be produced in them is not an indication that they will resist tubercle bacilli. However all this may be, the majority of observers have given tuberculin in increasing doses.

Few attempts had been made to determine the exact effect of any single dose of tuberculin until Wright announced his opsonic index method, but the inherent difficulties connected with this method detract greatly from its practical value. In giving tuberculin we must therefore decide upon what method we are going to pursue in regard to the increase of the dose. In some forms of tuberculin the symptoms seem to be a sufficient guide. Pardoe has obtained far better results in the treatment of tuberculosis of the genito-urinary organs by the use of Tuberculin R. than he has by any other line of treatment. He gives tuberculin in increasing doses until the patient shows some signs of over-stimulation; for example, increased frequency of micturition. The dose is then reduced, and this reduced dose is given for a long time without any attempt to increase it. In other words, he has found from the symptoms the limit of tolerance of the patient to tuberculin and then keeps well within this mark. Wright, himself, determines the opsonic index in practice very much less frequently than many of us have been led to suppose. As long as a patient continues to do well on a certain dose which increased his tuberculo-opsonic index he gives this dose. When, however, there is some reason to suppose that the patient is not getting as much benefit, and does not feel the good effects of the tuberculin, then he believes it is time to take again the opsonic index. Hastings, of New York, has found that it is necessary in these cases to take the index every other day for four or five times, in order to determine the exact effect of a single dose of tuberculin. The index must go up and remain up for several days, or else the dose is not properly graduated for the needs of the patient. This method seems to give the best results in the treatment of surgical tuberculosis. There is possibly, however, another explanation of this which I shall mention later.

The older method of giving tuberculin is to increase the dose, avoiding all symptoms until the patient becomes immunized to tuberculin. The opsonic index is disregarded in this method and Kinghorn and Twichell have found in pulmonary tuberculosis that whether the inoculation was made during the negative or positive phase, the index was as likely to go up as down. They used chiefly the old tuberculin. Auto-inoculation may account in part for this, and it is of interest to note that the Wright school has never been enthusiastic about the results obtained in pulmonary tuberculosis by method.

By this clinical method, which is well borne by patients with pulmonary tuberculosis, every attempt is made to avoid hypersusceptibility. By this I mean a tendency on the part of the patient to react much more readily to tuberculin. In other words, when slight symptoms have been ignored and the dose increased, the patient has a more or less marked reaction, consisting of pain, redness and swelling at the site of the injection, headache, malaise, often some symptoms connected with a gastro-intestinal tract, such as nausea and vomiting, at times increased cough and expectoration, oppression in the chest or pleurisy, together with some elevation of temperature. The succeeding dose is reduced, but the patient reacts again. He may also react to several doses, each reduced in turn, and the only course left open for us is for a time to discontinue the use of tuberculin. Every effort must be made so to increase the doses of tuberculin as to avoid this hypersusceptibility. As I stated before, the successful treatment with tuberculin is like the successful treatment of the disease. Both require great care in regard to small details. There should be perfect understanding between the patient and the physician who gives him tuberculin and he should be told that the only way to a successful issue is to report any deviation of symptoms from the usual course. [I will pass around a couple of little booklets which I have found of great value in enabling patients to convey to me their exact condition after a dose of tuberculin.]

The time of the injection is chiefly important in regard to the observation of symptoms arising after the inoculation. I am led to believe that the convenience of the person who administers tuberculin has had more to do with the selection of the time when it should be given than other factors. At the Adirondack Cottage Sanitarium it has always been given at night, and I believe this a much better time inasmuch as the reaction following tuberculin rarely occurs earlier than ten hours after the injection. Another important point is the fact that the maximum temperature during the day has been attained by that time. The morning remission, Sahli thinks, may obscure the reaction but, studied in connection with the symptoms, this does not seem at all probable to me. For these reasons I am inclined to believe that the best time to give tuberculin is during the late afternoon or evening.

The recent tests based upon the susceptibility of the skin and conjunctiva to tuberculin have suggested that we should pay more attention to the local or skin reaction at the site of injection. The susceptibility of the skin to tuberculin varies greatly with different patients. Some fail to show a single reaction throughout the entire course; others react in this way to every dose of tuberculin. In many instances not only the site of the last injection but the site of one or more previous injections may also be reddened, elevated and painful to touch or pressure. Recently I have been endeavoring to convince myself of the connection between the skin and the general reactions. I have not yet arrived at any very definite conclusions, but so far I can state that a slight skin reaction may be disregarded and the dose increased. In a number of instances the dose may be slowly increased where the skin reaction is marked without much danger of producing a general reaction, but I do not advise such a course. Another point of interest is the fact that this reaction is more likely to occur when tuberculin is given subcutaneously in the limbs than on the trunk. Many patients suffer considerable discomfort when tuberculin is given in the lower arm but have little or no discomfort when it is given in the upper arm or in the back. I am at present in a number of cases trying to give tuberculin in the forearm to see whether or not the guide which this site gives us is of advantage in deciding the increase of the dose.

The " organ " or focal reaction has been looked upon as of considerable importance, both in diagnosis and in treatment. However that may be, a large number of patients who react to tuberculin and later develop physical signs in the lungs and possibly tubercle bacilli in the sputum show during the reaction no increase or indeed no physical signs when none have been present previously. Consequently, in regard to the lungs, I feel that this " organ reaction " is of little use, though some (von Ruck and others) believe that it is of considerable importance in determining the dosage.

The symptoms produced by tuberculin may be discussed under two heads, first, the localizing symptoms, and, second, the general symptoms. The former are not nearly as likely to occur as the latter unless pronounced reactions are produced, and consequently are of less importance. Increased cough and expectoration always demand careful consideration, and it is wise often to omit several doses of tuberculin until these symptoms return to their usual level or at any rate cease to increase. Oppression in the chest is not frequently noticed. Pleurisy is at times present after reaction but other times is so constantly present as to be of little value as a guide. In some forms of genito-urinary tuberculosis these localizing symptoms have proved of the utmost importance as I have already mentioned in regard to Pardoe's excellent results. The occurrence of hemoptysis is very infrequent and, in fact, some claim that tuberculin not only prevents hemoptysis but can be safely administered while the patient is spitting blood. Personally I have always omitted the administration of tuberculin until the patient had ceased to spit blood for a week at least.

The general symptoms when the clinical method is used are the most valuable criterion that we have in regard to the increase of the dose of tuberculin. It is in regard to these that the mistakes are most usually made and for this reason many patients are given too large a dose of tuberculin. Any deviation from normal or the occurrence of the slightest and most trivial symptom that was not present before should be carefully considered. Due weight of course must be given to the occurrence of symptoms in neurotic patients. Pronounced symptoms should rarely occur if the dose has been carefully selected. Slight headache, malaise, a feeling of chilliness, are all very suggestive and even without the occurrence of the slightest rise of temperature require a repetition of the same dose. Pain in the limbs or joints, faintness, giddiness, sleepiness, fatigue, restlessness, nervousness, stimulation, rarely occur alone, but like indigestion, nausea, and vomiting are often present at the same time. Insomnia may mean a rise of temperature occurring during the night, and the patient should be advised to take his temperature during the night when suffering from insomnia. Other symptoms than these are infrequent, and when the dose is carefully selected these symptoms also rarely occur.

In some instances it is very difficult to decide whether or not symptoms are to be attributed to tuberculin, but in any case of doubt it is wise to do so and to grade the doses accordingly.

Rise of temperature, long looked upon as the most important guide in relation to the dose of tuberculin, I have left until last for, while it is present in many instances in a large number of patients, many of these symptoms may occur without any perceptible disturbance of the temperature curve. There is one interesting point in this connection, namely, that the broth filtrate, Denys's tuberculin, seems more likely to produce symptoms without elevation of temperature, while the Bacillen Emulsion very often produces a sudden sharp rise of temperature with pronounced symptoms without any previous warning. This is rarely true of Denys's tuberculin. In regard to rise of temperature the same rule applies here as applies to the other symptoms, — the slightest deviation from the usual course must be noted and carefully considered. A rise of a few tenths of a degree, especially when accompanied by any other symptoms, means a repetition or a reduction of the last dose. When the temperature reaches 100° the last dose should always be reduced, and if this rise be accompanied by symptoms at all pronounced the reduction should be marked, that is, to ¼ to ⅕ of the last dose. If the temperature goes higher than this, for example, to 101°, it is wise to omit several doses and then to begin with this greatly reduced dose. Tuberculin should never be given after a rise of temperature, until the temperature has become normal or has returned to its former level for a period of two or three days, and if the rise has been marked the former level should be maintained for a longer period before tuberculin is again given. If these rules are neglected it is very easy to produce so marked a degree of hypersensibility in the patient that tuberculin in almost any dose will not be tolerated.

The pulse range following tuberculin has been thought by some to be of considerable value in graduating the dosage, but this symptom is so easily affected by variations in the environment of the patient that it is difficult to interpret it properly and, indeed, unless taken by a nurse to whom the patient is accustomed, may be misguiding. There is no doubt that tuberculin does somewhat increase the pulse rate. The weight is of more value in the selection of patients than it is in determining the dosage. If, however, the patient steadily and continuously loses weight it is often wise to interrupt the treatment until the nutrition becomes better.

Due consideration must be given to the occurrence of slight complications, for example, a coryza, a slight indigestion, or any complication arising during the course of treatment, for the reason that it may reduce the patient's tolerance and render him more susceptible to tuberculin. I have seen several cases where the patients acquired, for a time, at least, considerable intolerance through failure to observe these precautions.

From all this it may be seen that whenever any of these symptoms or signs, however slight, arise one of several courses is open: first, to repeat the dose, and this repetition may have to be made a number of times; second, to lengthen the interval; third, to reduce the dose; and, fourth, to omit the dose. The individuality of the patient and his susceptibility to tuberculin must be clearly borne in mind throughout the whole course. It is wise in every instance, when in doubt, to err on the side of too little rather than too much tuberculin.

From what has been said it is readily seen that it is difficult to bring every patient to the same final dose of tuberculin. The optimum dose, a point emphasized by Sahli, varies in my opinion for every patient and it is very unwise if, after large doses are reached, signs of intolerance to these doses manifest themselves, to attempt to push on to reach some fixed point simply for the reason that that is the dose that we want to attain. Harm in my opinion may result from such a course, and I am more and more convinced that as much benefit can be derived from small doses of tuberculin as from larger doses. It has been pointed out that it might be a good plan when the patient begins to show lessened susceptibility to tuberculin, to interrupt the treatment for a little while and then to return after susceptibility reappears to smaller doses. (Petruschky.) The usual final dose of many tuberculins, O. T., B. F., Beraneck's, etc., is 1 ccm., but I do not believe that we should attempt to reach this dose in many patients. As I said before, immunity to tuberculin does not mean immunity to tuberculosis. It seems to me that the wiser course to pursue, even though we attempt to produce tuberculin immunity, is to carry the patient up to that dose which only begins to produce symptoms of reaction. The dose should then be considerably reduced and slowly increased again. Very often the previous limit can be surpassed, but even if this is not possible no attempt should be made to carry the patient on in spite of the occurrence of reaction. The hypersusceptibility noted by Loewenstein and many others following a repeated small dose of tuberculin was first pointed out by Koch, who believed that it was very characteristic of tuberculin. Whether or not this hypersusceptibility produced by repetition of the same dose may not be called into play when small therapeutic doses are repeated is still an open question. I feel, however, that this must occur for otherwise I do not see how we can explain some of the reactions that I have obtained with very small doses.

Tuberculosis is a chronic disease, and usually when a patient applies for tuberculin treatment the disease has already existed for months if not years. The treatment of tuberculosis by any successful method depends largely upon the length of time it is followed and, as I have noted before, the observation of minute but essential details. It is therefore useless to expect much from a short course of tuberculin. In fact it is wiser not to give any patient tuberculin until it has been fully explained to him, and until he agrees to continue the treatment for at least five or six months. In many instances tuberculin should be administered over much longer periods, a year or indeed fifteen months, and then after a period of intermission a second course should be begun.

In regard to any schemata for dosage, I would say that tuberculin cannot be given by rule of thumb, and he who has not the most profound respect for it will sooner or later come to grief. The usual method of giving tuberculin in the proportion of .1, .2, .3, .4, .5, .6, .7, .8 and .9 of the solution employed means a variation in the increase from 100% down to 11%. I first varied this by using the following scale: 1, 1.5, 2, 2.5, 3, 4, 5, 6, and 8; and then giving .1 of the next solution which is always 10 times the strength of the preceding. In this the increase varies frequently from 50% to 20%. Fewer reactions it seemed to me occurred with this rate of increase. More recently, however, Weber's law of sense perception has been taken note of, and a logarithmic scale was computed for us by the late Mr. E. G. Pope. I will pass around several copies of this scale and in it you will notice that in going from .1 to 1 ccm., or as I have noted it in the table, from 1 to 10, the increase, which is always in exactly the same proportion for each column, varies, of course, with the number of doses in each column, that is, from two to twelve doses. I have usually employed the column headed "6" where the rate of increase has been throughout about 50%. I may say that the rates of increase vary from about 300% in the column headed "2" to about 20% in the column headed "12."

Selection of patients. — The theory of the action of tuberculin plays an important part in the selection of patients for treatment. As far as we know to-day, tuberculin requires that certain properties of the cells must still be present. An antitoxin could not be found by Trudeau, Baldwin, and a number of capable observers, though more recently some men who have followed new lines of research have announced the discovery of an antitoxin in the cells. If tuberculin requires an active response on the part of the organism to produce any beneficial effect it is readily seen that it is useless to give tuberculin to patients who are so far advanced in the disease that the cells have lost all powers of resistance and fail to respond to any stimulation. Consequently, it is useless to give tuberculin to patients with acute types of the disease or to patients who fail to react to the toxins which we know must be present within their systems. The most probable theory for the explanation of the action of tuberculin is that it is an enzymogen which sets free in the body certain disintegration or digestion products of the tubercle bacillus which are stored in greater part in the cells near the seat of disease. This endotoxin produces the reaction which follows when a sufficient quantity of tuberculin has been given to a patient who is susceptible to its influence. More recently Wolff-Eisner has combated this view and believes that tuberculin owes its efficiency to the fact that it contains "splitter" products of the tubercle bacillus. You will remember that these fragments of the tubercle bacillus have been found by Spengler in sputum which apparently contained no definite tubercle bacilli. A tuberculous infection, at any time, Wolff-Eisner thinks, creates within the body certain bacteriolytic properties which may persist for years. When tuberculin is introduced into the organism in any way these bacteriolysins attack the minute bits of bacilli and set free the endogenous toxin which in turn produces both the local and the general reaction.

It has long been known that typhoid fever seems to exert some retarding influence upon the tuberculous process; at least we may say that it does not fan into activity a smouldering process. More recently it has been shown that the cutaneous and conjunctival tuberculin reactions are very likely to occur in patients recovering from typhoid fever. It is well known that a large amount of bacteriolysins must be present during the convalescence from this disease, and it has been suggested that these bacteriolysins may in part attack the tubercle bacilli or may attack, if Wolff-Eisner be correct, the minute fragments of the tubercle bacilli which are contained in the tuberculin. From this it is seen that an overdose of tuberculin would set free more endotoxin than is required to stimulate the organism to the production of antibodies of any sort. It is also readily seen that where reaction to tuberculin is absent in far advanced cases it may be due either to failure on the part of the cell to react to tuberculin or to lack of bacteriolytic substances.

Tuberculin, Sahli believes, acts like digitalis in cardiac disease, and is not only a specific, but a functional therapeutic means which acts only in a definite way on the toxin susceptibility of the organism. It neutralizes, as it were, this susceptibility and so enables the natural healing powers of the body, which for a time have been unable to exert themselves on account of the toxin, to come into play.

However all this may be, it is certain that tuberculin should be administered therapeutically only to those patients whose general condition is good. Patients with elevated temperatures should rarely be given tuberculin unless the temperature seldom goes above 99.5° to 100° and is normal or subnormal in the morning. If the minimum rarely falls below 100° little can be hoped from tuberculin. A tendency to hemoptysis, slight dyspnea, a persistently rapid pulse, dry pleurisy existing for some time, are no contra-indications to the use of tuberculin but demand care in its administration. Slight complications need have little weight in the selection of patients, but all acute complications are contra-indications. Nephritis unless tuberculous is a contra-indication for most persons, but some patients with a few casts and slight albuminuria seem to do well under the treatment. Marked nervousness is, in my opinion, no contra-indication as tuberculin affords a mental leverage of great force to many nervous patients who can attribute to tuberculin instead of to the disease many symptoms or slight exacerbations which otherwise would cause great mental disturbance. Syphilis and valvular disease of the heart if always well compensated are not to be looked upon as contra-indications. Pregnancy is also no contra-indication. When signs of extensive softening and ulceration have occurred, it is wise to administer tuberculin in very small doses with very small increases, or to avoid its use altogether.

The duration of the disease has little bearing upon the selection of patients except that it is an indication for the use of tuberculin when patients have tried for some time other forms of treatment without benefit.

Selection of tuberculin. — The selection of tuberculin is a difficult subject. Many observers still believe that the old tuberculin gives as good results as any of the later modifications. It is, however, in its preparation subjected to considerable heat, and recent work with various toxins has led us to believe that heat above 60° C. may in part, at least, destroy their efficiency. For this reason many have come to believe that the unheated products of the tubercle bacillus are to be preferred to those subjected to heat. Among the unheated products may be mentioned T. R., B. E., and Denys's tuberculin. The first two are really emulsions of the tubercle bacillus, the latter, as you know, the sterile filtered broth upon which the tubercle bacillus has grown and which probably owes whatever value it possesses to the fact that during the growth of the tubercle bacillus some have died and disintegrated in the medium. At present there is no proof forthcoming to show that the tubercle bacillus secretes any product during its growth. However this may be, excellent results have been obtained with the broth filtrate, or B. F. as it is known, and it is far easier to use because it is much less toxic. It is possible that it may contain some products that we have been unable to determine, and it appears to me, theoretically at least, that the best tuberculin for use would be an emulsion of tubercle bacilli in the broth filtrate. Our results at the Adirondack Cottage Sanitarium during the past year with B. F. have not been entirely satisfactory, and at present we are giving a number of patients this mixture. The mixture consists of equal parts of the ordinary .5% emulsion, known as B. E., and B. F. There are many interesting points in connection with the selection of tuberculin which I cannot go into, such as the fact which many observers have overlooked that the tubercle bacillus is already in the organism which we are striving to benefit. It is also known that man possesses comparatively good resistance against the tubercle bacillus, slight against the tubercle toxin. For this reason it might seem sufficient to immunize him against the toxin to render him capable of overcoming the tubercle bacillus. Whether the endotoxin of the tubercle bacillus is ever set free by any chemical processes, whether the old tuberculin represents the true endotoxin, are points that are still open for discussion, and the use of such a tuberculin as I have suggested seems to me to overcome both these difficulties.

Treatment during the administration of tuberculin. — Until recently, it was thought unwise to give tuberculin to any patient who was not constantly under a doctor's immediate supervision, in other words, who was not in a sanatorium or hospital. Recent practical results, however, have shown that this is not necessary, and furthermore, they have shown that ambulant patients and patients at work may be given tuberculin in carefully graded doses, so that not only no harm may accrue, but that the patient may derive great benefit. This means that the former rule that the patient should remain in bed or at rest in a reclining position the day of and the day following injection does not need to be enforced. I do feel, however, that where possible, patients should take less exercise the day after the injection of tuberculin. Rise of temperature to 100° for more than two hours necessitates, in my opinion, rest in bed during that day and the greater part of the next, or until the temperature becomes and stays normal, though practically when accompanied by very slight symptoms the temperature is almost invariably normal the second day even if the patient does not remain in bed.

Many medicinal substances have been administered in conjunction with tuberculin, but seem of little value. Various toxins or secondary organisms have been suggested for use in connection with tuberculin but have yet to be thoroughly tested.

The effects of repeated doses of tuberculin upon the animal economy have not been thoroughly worked out. The weight seems to be little affected. Changes in the blood have been noted by a number of observers, but the results are still conflicting. I have mentioned the change in the phagocyting power of the polymorphonuclear leucocytes.

The untoward results are very interesting, particularly in regard to the mobilization of the tubercle bacillus. Baldwin was unable to find any evidence that tuberculin, even in large doses, produces this effect. The work of Liebmann, who found many tubercle bacilli in the blood following tuberculin injections, has never been verified and I think can be discredited on account of faulty technic. The sputum and the urine are affected somewhat, but usually only following reactions. An antipyretic effect is unquestionably present in many patients.

The results obtained from tuberculin are exceedingly difficult to determine. It must not be forgotten that tuberculin is a powerful toxin, that if administered carelessly it may produce great and irreparable harm. The vast majority of men who have used tuberculin seem to be convinced that it has some beneficial effect. I myself am firmly convinced of this while I have some difficulty in proving from the results that I have obtained that a markedly beneficial effect is present. In fact, I think the present status of tuberculin may be expressed in a few words: Tuberculin when properly given does no harm, may produce no apparent immediate results, but may markedly benefit an individual patient who can follow at the same time the hygienic-dietetic treatment while in a health resort or at home and at rest. It may even prove of benefit to those who must continue at work. Small doses and careful increases are most important, and by following these very closely some patients, even in advanced stages, reap great benefit. The immediate and ultimate results of treatment are often improved, fewer relapses occur, and more patients lose the tubercle bacilli in their sputum.

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Research Work in Nutrition in the Tropics.— Dr. Hans Aron, of Berlin, Germany, has been appointed professor of physiology in the Philippine Medical School, Manila. Dr. Aron will devote special attention to the question of tropical foods, and the Philippine administration has placed $2,000 at his disposal for the purchase of laboratory apparatus.— *New York Medical Journal.*

PERMANENT STENOSIS OF THE DUCTUS COMMUNIS FROM INFLAMMATORY INFILTRATION OR CICATRICIAL CONTRACTION OF A DUODENAL ULCER.

IMPLANTATION OF THE DUCT AT ANOTHER POINT IN THE DUODENUM. GASTRO-ENTEROSTOMY. RECOVERY.

BY HORACE PACKARD, M.D., BOSTON,
Professor of Surgery, Boston University.

This case is deemed worthy of record because of the complexity of symptoms presented, the remarkably complicated pathological conditions exposed on exploratory incision and the equally remarkable recuperative power exhibited by the patient in the convalescence.

In February, 1907, I was summoned in consultation by Dr. O. R. Chadwell over a case of very profound icterus. The patient was a man of medium height, spare in his build, sedentary in his habits, engaged in intellectual pursuits and with very pronounced ideas on food and nutrition — a vegetarian. His frugality had been carried to such an extent that he, at times for considerable periods, partook of nothing in the way of nutriment but nuts and raisins. His first attack of jaundice occurred about three years prior to my relation with his case. Under treatment this had cleared up and in the intervening time up to the present illness he had pursued his usual routine of life.

One month ago he had again become jaundiced coincident with an attack of grippe; the stools became clayey and the urine very dark. He had pain in the epigastrium and right hypochondrium, chills and one attack of nausea. No subscapular pain. The stools later had become very black and were still so.

Physical examination disclosed general icterus of the highest degree of intensity; emaciation; heart and lungs normal; abdomen flat and of normal percussion note, except in the right hypochondrium where an elongated oval smooth tumor could be easily detected on palpation, extending from the region of the eighth costal cartilage to below the level of the umbilicus. The tumor was evidently the gall bladder, enormously distended, such as is not infrequently met as a result of plugging of the cystic duct by a gallstone. So profound icterus, however, could hardly be explained by such a physical condition, therefore it was assumed that there must be some pathological condition in the common duct which had brought about complete obstruction to the overflow of bile. The most plausible theory was plugging by a biliary calculus. At the same time there was the disquieting fact of intensely black stools which could be accounted for in no other way than by the escape of blood into the intestinal tract. Accepting this theory the question then arose, What causes such escape of blood, and has the well-known hemophiliac tendency of the icteric state anything to do with it? There had been no symptoms indicative of ulcer of the stomach. There was no history of black stools prior to the attacks of jaundice, and as far as I could learn, no thought had arisen in the minds of any of his previous medical advisors of ulcer of the duodenum.

As the case is viewed now in the light of subsequent developments it appears that the black stools were the key to the diagnosis and should have led unerringly to the conclusion that there must be an ulcer of the duodenum involving the ampulla of Vater, and that in the course of cicatricial contraction, or inflammatory thickening, the duodenal outlet of the common duct had become occluded.

"Confession is good for the soul"; therefore permit me to say that not a thought that duodenal ulcer could possibly bring about such a condition as the patient was then in entered my mind; therefore a guarded diagnosis was rendered of obstruction of the common duct, probably from gallstone impaction.

Immediate operation was advised and accepted. The patient was transported to the hospital and operation performed at once.

The Mayo-Robson incision for exposure of the gall bladder and ducts was made. Immediately an enormously distended gall bladder came into the field, thin-walled and tense almost to the point of rupture. Already degenerative spots were apparent, suggestive of gangrene and perforation. Cholecystectomy seemed imperative and was at once proceeded with and accomplished without incident. No calculi were found in the gall bladder. The cystic duct was double ligated close to the common duct and its stump covered with peritoneum. The common duct was then carefully palpated and was found greatly distended but no stone could be detected. It was slit open and a small drainage tube fastened in with catgut sutures. At this point it was deemed unwise, in view of the precarious condition of the patient, to further prolong the operation although it was fully recognized that the cause of the obstruction had not been removed. Nevertheless, it was hoped that drainage of the ducts would bring about a salutary change for the better. In the next four weeks the course of the patient was remarkable. The icterus gradually cleared up until the skin resumed its normal color. The black coloration of the stools disappeared and they became white. The urine cleared up entirely and the bile continued to pour from the wound day and night. All this time the patient was developing a ravenous appetite, enjoyed his food as he had not done for many months, in fact insisted that "we had given him a new stomach."

Under all these generally favorable conditions, I was hoping against hope that nature would open up the common duct and once more divert the bile into its normal channel.

Eight weeks went by and still there was not the slightest trace of bile in the stools. The patient by that time was up and about out of doors in a wheel chair daily, and greatly improved in flesh and strength.

At this juncture further operative measures were discussed, and assented to by the patient. April 11, eight weeks and three days after the first operation, the wound was reopened, the biliary sinus traced down to the common duct which was isolated sufficiently for identification and temporarily abandoned, pending further exploration. The duodenum was next exposed by incising the peritoneum at its reflection on to the posterior abdominal wall and turning it (the duodenum) upward and toward the patient's left. It was split open longitudinally sufficiently to admit the finger for exploration. The ampulla of Vater was sought with the thought of finding a stone imbedded therein. The true state of matters immediately became apparent. At the site of the ampulla there was a deeply excavated round ulcer surrounded by a considerable amount of inflammatory or cicatricial tissue or both. The difficult problem presented was to restore direct communication between the common duct and the duodenum. I knew of no precedent to guide me but returned to the common duct and still further isolated it from its surrounding attachments, and cut its duodenal end off. I found that I had a little over one inch of common duct free and under control, and proceeded to implant it in the duodenum in a new place. The duct and duodenum came together readily without appreciable tension on either. A knife puncture was made through the wall of the duodenum at a point which seemed favorable for implantation, and with the aid of two Pagenstecher threads passed through the duct and serving as leaders it was pulled through the opening of implantation until it could be seen well inside the mucous membrane. The same threads were used to fasten the margin of the opening of the duct to the mucous membrane. With a continuous Pagenstecher thread, the muscular wall of the gut was folded over the duct as represented in the illustration. (See cut.)

The longitudinal wound in the duodenum was then closed in the usual way.

In view of the pathological condition in the duodenum it was deemed wise to make a posterior gastroenterostomy which was immediately proceeded with and completed without incident. A triplex drainage was adjusted at the point of implantation and the wound closed. There was no further leakage of bile, the feces resumed their natural color within a few days.

The wound suppurated but healed rapidly by granulation. For the first few days the patient was kept on rectal aliment, then, little by little, water and easily digested fluids were tried per mouth, well borne, and increased until at the end of three weeks a generous but simple diet was being taken and well-digested and assimilated. From this on his convalescence was rapid and uneventful and he left the hospital five weeks from the date of implantation. At the present writing it is one year since the implantation and the gastroenterostomy.

The patient has resumed his usual round of life consisting of lectures, addresses and literary work.

A recent interview and examination shows the patient in good flesh, healthy color, and he reports that his appetite and digestion are all that can be asked, and the stools a rich, yellow brown. He has some pain in the right hypochondrium after eating a full meal, but not if he eats lightly. The cicatrix is weak and needs constant support of a band. Two nodes, one of which is painful and sensitive, are apparent on either side of the scar at the upper part. These are somewhat disquieting because they are suggestive of a possible carcinomatous complication.

The patient thinks that at one time since the operation, when he was absent from his home on a lecture tour, he became slightly jaundiced, but it quickly passed away and there has been no recurrence. At that time he was practicing his vegetarian régime and living on almonds. He also thinks at that time that the stools became black for a brief time.

In neither operation was there exhibited any condition of the tissues suggestive of carcinoma, and at no time has there been the slightest evidence of cachexia.

CONCLUSIONS.

A review of surgical literature indicates that but little has been done in this kind of plastic surgery treated in this paper. Only two cases have been found on record.

Dr. Wm. J. Mayo reports a successful case of implantation of the hepatic duct.[1] He had operated ten months previously for gallstones and had removed the gall bladder and drained the common duct. Recurrence of profound icterus necessitated the second operation which showed cicatricial stenosis of the common duct. He was able to dissect out a sufficiency of the hepatic duct to effect an anastomosis with an adjacent portion of the duodenum. Ten months after the patient was well and had gained thirty-one pounds. He remarks upon the original removal of the gall bladder as unfortunate since, had it been left, cholecysterostomy might have been performed far easier and would probably have afforded sufficient drainage.

Franklin B. White and F. B. Lund[2] report excision of the pylorus and the first portion of the duodenum in the course of which the common duct was cut and successful reimplantation made in the second portion of the duodenum.

Both Dr. Mayo's case and my own suggest the question of the propriety of the removal of the gall bladder as a primary operation in any case. It will be noted in my quotation that Dr. Mayo expresses regret that he made cholecystectomy in the first operation. He further adds, "Since that time we have been more conservative about removal of the gall bladder in connection with common duct surgery."

In my case, as the weeks went by after the first operation with no sign of re-establishment of bile into the duodenum, I felt keen regret that I had not been more conservative and tried at least to save the gall bladder even though it did not look promising. When I finally determined to proceed to a second operation, it was with no definite plan of procedure, except that it seemed to me desirable to open the duodenum for exploration of the ampulla of Vater. The final reimplantation of the common duct and the posterior gastroenterostomy were wholly unanticipated, and determined upon only after the discovery of the true pathological condition.

This case has been of extreme interest to the writer because of the rare and, as far as can be learned, almost unprecedented complications. The question naturally arises, Why did not the pancreatic duct also become occluded? Its point of discharge in the ampulla would suggest that it is equally likely to become entangled in the cicatricial tissue and inflammatory infiltration of a duodenal ulcer located at that place. Its own solvent action upon dead or degenerate tissue may have enabled it to keep a channel clear. I do not know that it was not occluded but the patient gave no evidence of pancreatic complication such as we should naturally expect would follow complete obstruction of the pancreatic duct.

Some interesting facts were developed or confirmed as a result of the operative interference. All the while the whole volume of bile was discharging from the abdominal wound, the general condition of the patient — appetite, digestion, flesh, strength, and color — was improving.

As the icterus subsided and digestion improved, the change from intensely black to white clayey stools was an exceedingly interesting phenomenon.

It appears a fair conclusion that all the while that the stools were black, an oozing of blood was going on from the duodenal ulcer. What stopped it? Was the cessation due to the clearing up of the jaundice or the drainage of the stomach through the new outlet, or both?

There is one point of difference between my operation and the two others quoted which may or may not be an important one: in implanting the duct it was buried an appreciable distance, an inch or so (see illustration). It seems to the writer that such a method of implantation when possible is a better mechanical arrangement.

REPORT OF A CASE OF MELANO-SARCOMA OF THE ORBIT.

BY GUTHRIE McCONNELL, M.D.,
AND
RUDOLPH BURMAN, M.D.

(From the Laboratory of the St. Louis Skin and Cancer Hospital.)

The following case of melanotic sarcoma of the orbit seemed of sufficient interest, both clinically and pathologically, to warrant its being reported. The quite long interval between the primary operation and the recurrence with subsequent death is unusual. The lesions in the liver also attracted attention on account of the association of the sarcomatous metastases with a great hyperplasia of the epithelium of the bile ducts — a combination of both connective tissue and epithelial overgrowth.

The history of the case and the autopsy findings are as follows:

H. F., age sixty-four, white, male, laborer.

Family history. — No malignant or tubercular disease in the family. Parents both dead, cause not known. Two brothers and one sister living and in good health.

Personal history. — Always enjoyed good health until the present trouble, which appeared about seven years ago, when by accident he found that he could scarcely see with the left eye, which gradually became worse until there was complete loss of vision in that eye At this time he consulted an oculist who informed him that the pupil was destroyed. He then consulted several other oculists who told him that unless the diseased eye was removed that the vision of the right eye would probably be impaired or destroyed. He, acting on this advice, had the eye removed, after which time he wore an artificial eye. This he continued to wear for about four years. At the end of this time he noticed that the tissues of the orbit became painful and considerably inflamed. He again consulted an oculist who told him the trouble would probably result in cancer. The patient here stated that the eyelid and tissues of the orbit in general presented a marked congestion which gradually became worse; there was, however, not much pain at this time.

An operation was again advised, to which he consented, when more of the tissues of the orbit were removed. He was told that all of the diseased tissue

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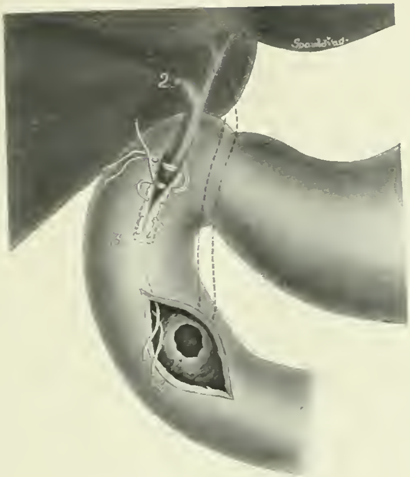
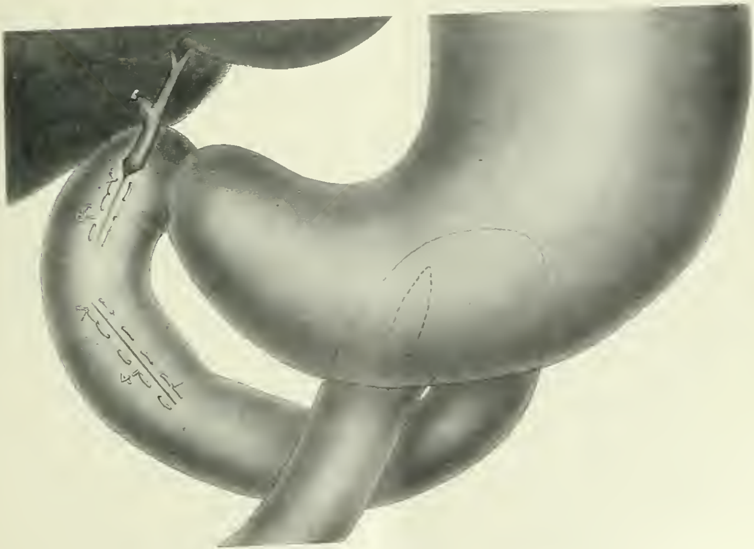
[1] Annals of Surgery, July, 1905.

[2] Boston Med. and Surg. Jour., Sept. 5, 1907.



1. Ulcer in duodenum at site of ampulla.
2. Cystic duct ligated in first operation.
3. Reimplantation of common duct.

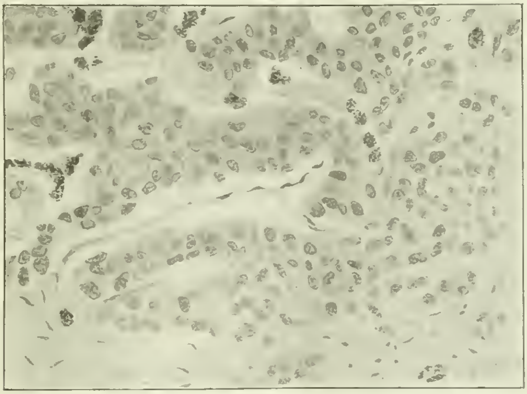


4. Exploratory wound of duodenum sutured.
5. Completion of implantation of common duct. Posterior gastro-enterostomy.

had been removed and that it would in all probability not return.

But, after about three weeks only, he again noticed the growth returning and rapidly filling the orbit. At this time he suffered considerable pain, which was worse at night.

He was then admitted to the St. Louis Skin and Cancer Hospital, under the service of Dr. H. G. Mudd, on Nov. 26, 1906, six months after the last operation. At this time there was found a large bulging mass, bluish black in color, filling the orbit. This caused the upper lid, which was of a dark brown color, to be very much distended, so that it was great enough to almost cover the growth. On palpation a boggy yet somewhat tense growth was revealed, the general appearance indicating a melano-sarcoma.



Hyperplasia of the bile ducts in a case of secondary melanotic sarcoma of the liver. Oc. 2. Ob. 6. (G. K. McC.)

An operation was at first advised, but upon finding the liver nodular and very greatly enlarged, the conclusion was reached that there was a secondary growth in the liver and that no benefit would be derived from an operation. He was then given x-ray treatment from Dec. 10, 1906, to Jan. 21, 1907, with no improvement whatever. He gradually became weaker, was slightly delirious at times and finally died Jan. 25, 1907.

Clinical diagnosis. — Melano-sarcoma of the orbit with secondary involvement of the liver.

Autopsy report. — Body that of a large, well-developed white male adult.

On opening the abdomen considerable straw-colored fluid escaped. The omentum contained much fat and was densely adherent to the spleen. The liver projected below the umbilicus and to the left axillary line. The stomach and the transverse colon were displaced to the brim of the pelvis. The appendix was short but apparently normal. The posterior surface of the colon was free from adhesions.

Weight of organs in grams: Heart, 430; left lung, 800; right lung, 1,200; spleen, 580; left kidney, 210; right kidney, 210; liver, 3,790; brain, 1,340.

Heart. — The pericardium was smooth, except on the anterior surface of the heart, where there was a large irregular milk spot. The sac contained a small amount of straw-colored fluid. The heart was very much enlarged and dilated. The walls of the left ventricle were much thickened. The aortic leaflets were thickened and adherent to each other. The papillary muscle showed considerable sclerosis. The mitral leaflets were thickened and contracted.

Lungs. — Both lungs were enlarged and dark in color. There were no pleural adhesions. The posterior portions were swollen and quite firm, and on section a large amount of a frothy blood-stained fluid escaped. There was some slight emphysema along the anterior and lower borders.

Spleen. — The spleen was very much enlarged and firmly adherent to the omentum and the adjacent tissues. The capsule was greatly thickened and cartilaginous to touch. The pulp was soft and friable and very much congested. In the substance of the organ was one small white nodule about 1½ cm. in diameter.

Kidneys. — Both organs seemed slightly enlarged, dark in color and quite firm. On the surface were present several small retention cysts. The capsule stripped fairly easily, but in some places removed portions of the renal tissue. On incision the cortex and the medulla were found quite congested, but there was no apparent diminution in the thickness of the cortex.

Adrenals. — Apparently normal.

Pancreas. — Apparently normal.

Stomach. — Was much dilated, the walls thin, mucosa grayish in color and contained many minute areas of ecchymosis. Some thick mucus was present.

Liver. — The liver was very much enlarged, 30 cm. in length, 25 cm. in width and 11.5 cm. in thickness. The surface was marbled, large irregular pale areas and smaller coal-black ones alternating with those that were reddish-brown in color. The surface of the right lobe was quite irregular. The organ was very firm on section and the entire liver was found to be infiltrated with new growth. The areas varying in size from a pin's head to two or more centimeters in diameter.

The common bile duct was patulous; the gall bladder contained a small amount of golden brown fluid; no calculi.

Brain. — The dura in its entire extent was so densely adherent to the skull that it was impossible to separate without tearing. Along the margin of the longitudinal fissure there was considerable edema. There was some atheroma in the circle of Willis and in the basilar artery. No extension of the orbital growth in the cranial cavity was found.

Orbit. — The left orbital cavity was completely filled with a soft, pulpy, intensely black mass. The roof of the orbit had undergone considerable necrosis, so that the chief covering was the dura. No definite structure of any kind could be distinguished in the mass. Anteriorly it was adherent to and covered by the upper eyelid.

Aorta. — Showed considerable atheroma and calcification, the latter also well marked in both common iliacs.

Intestines. — Apparently normal.

The microscopical examination showed the following:

Liver. — The sarcoma nodules in this organ are very numerous. They differ greatly in their size but all are distinctly separated by bands of connective tissue, which is enormously increased. All of these nodules contain more or less pigment of a yellowish-brown color, some contain a small amount only, while others are simply a mass of the pigment with an occasional tumor or liver cell evident. This pigment also infiltrates the adjacent connective tissue to a greater or less extent. There is also some round-cell infiltration and interstitial hemorrhage in the connective tissue. The cells in these nodules are of the spindle form with oval rather faintly staining nuclei. In other areas we find large round cells with a round, rather deeply staining nucleus. In some places the nuclei of the tumor cells are apparently entirely replaced by this yellowish-brown granular pigment.

Bile ducts. — There is an extreme increase in the number of the bile ducts with considerable variation in their size and shape. Some being round with a small amount of liver tissue adjacent, others considerably elongated with a marked increase in the connective tissue, and still others papillomatous in character situated in a mass of connective tissue. In some places are found numerous acini, the remnants of the bile ducts. These acini are lined by epithelial cells, some having finger-like projections extending into them. The biliary epithelium has in places proliferated to such an extent that there is an almost entire absence of liver cells. The nuclei of these cells are as a rule large, oval, and faintly staining.

Orbit. — The growth of the orbit is surrounded by a dense band of connective tissue which penetrates into the growth proper and divides the mass into distinct nests of various sizes and shapes. These nests in some places are simply masses of the yellowish-brown granular pigment with an occasional tumor cell distinguishable. In other places the nests show only a small amount of this pigment. Some of these cell masses have undergone considerable necrosis, which is shown by the absence of staining quality and the granular condition. The pigment, however, is present here in varying amounts. The connective tissue surrounding and separating these nests is infiltrated with pigment, small round cells and some erythrocytes. The cells vary greatly in their size, shape and staining powers, the large oval deep-staining nuclei being in the majority.

Kidney. — This organ shows a marked parenchymatous with some interstitial changes, with an exudate into some of the glomeruli. There is also a great amount of capillary congestion, an increase of connective tissue and some small round cell infiltration.

Lung. This tissue shows considerable congestion with a large amount of exudation, filling up many of the alveoli. There is also present some round cell infiltration.

Spleen. — The capsule is very greatly thickened. There is considerable congestion present with a marked thickening of the vessel walls. One tumor nodule is present, the cells of which vary considerably in size, shape and staining qualities, the oval deep-staining nuclei predominating. This nodule also contains a small amount of pigment.

Although melanotic sarcomata, particularly those of the orbit, are generally considered to be very rapid in their growth, such was not the case in this instance. There was an interval of nearly eight years between the first indication of trouble and the death of the patient. After the first operation the growth remained apparently quiescent for a number of years, not taking on new proliferation until there had been the action of an irritating body. In this case that body was evidently an artificial eye. After the second operation the sarcoma underwent a very rapid growth with the ultimate death of the patient.

The point of pathologic interest was the great enlargement of the liver. This was almost entirely due to the extreme hyperplasia of the bile ducts with also an increase in the amount of the connective tissue. The sarcomatous metastases although quite numerous were not very large nor could they have added much to the bulk of the organ.

Microscopically the epithelial proliferation resembled that of a diffuse malignant adenoma and would have been so diagnosed if the general clinical and pathological history of the case had not been known. There were, however, no secondary growths, the lesions being confined entirely to the liver.

Clinical Department.

A CASE OF PUSTULAR ACNE TREATED WITH STAPHYLOCOCCUS VACCINE.

BY B. D. RIDLON, M.D., NATIONAL SOLDIERS HOME, ME.

Mr. ——, age sixty-four, had been treated for severe pustular acne of the nose for nearly a year without improvement. Various ointments and local applications supplemented by constitutional treatment and the light treatment had been tried with little or no effect. His nose at time of admission to hospital was nearly twice the normal size, inflamed and covered with dried scabs and pustules. Cultures were made from the pus of some of the pustules which proved to be pure staphylococcus albus, and vaccines were obtained from these.

May 26, 1 ccm. injected. This injection was followed by no physical signs except on the second day a marked improvement in the appearance of the nose. The inflammation had noticeably abated and the pustules had begun to disappear.

May 31, improvement continues; nose has attained normal size and soreness has nearly disappeared; patient able to wipe his nose for the first time in months.

June 6, second injection of 1 ccm. Improvement continues and redness fast fading out. June 14, third and last injection.

Appearance of nose steadily improved until all signs of the disease disappeared except the scars of the pustules and there has been no recurrence to date.

In reporting this case, I desire to acknowledge my obligations to Mr. H. T. Quinn, of the State Laboratory, for his valuable assistance in the preparation of cultures and vaccines.

Reports of Societies.

CLINICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY IN CONJUNCTION WITH THE BOSTON MEDICAL LIBRARY.

MEETING, WEDNESDAY, MARCH 18, 1908, at 8.15 P.M.

RICHARD C. CABOT, M.D., Chairman; EDWIN A. LOCKE, M.D., Secretary.

DR. LAWRASON BROWN, Saranac Lake, N. Y., read a paper entitled

DIAGNOSTIC AND THERAPEUTIC USE OF TUBERCULIN.

DISCUSSION.

DR. FREDERICK C. SHATTUCK: My experience with tuberculin is limited to its use as a diagnostic agent. I have never used it therapeutically, and my experience with the Calmette method is confined to a few recent cases, so that I do not feel warranted in speaking about it.

For some twelve years now I have used tuberculin, especially in the hospital, for diagnostic purposes. The exact number of cases I cannot give, but it probably goes up into the hundreds. I have used either 5 or 10 mgm. of Koch's tuberculin, recently 7 mgm., in a single dose. I have thought it a valuable aid to diagnosis, although, of course, as Dr. Brown has said, there are sources of error. A non-tuberculous patient may react to tuberculin, and, on the other hand, a reaction may lead one to believe that the patient is suffering from tuberculosis, although that disease is latent, and the active disease may be something quite different. In doubtful cases tuberculin may afford assistance, and I have never seen any ill effects from its use, apart from the temporary malaise, which it may cause, save in a single case, one of Addison's disease. A young woman of twenty-six entered the Massachusetts Hospital, under Dr. J. J. Minot's care the 20th of September. She was treated by adrenalin, both by stomach and by rectum, without any benefit. I came on service the 1st of November, and on the 5th ordered an injection of 7 mgm. of tuberculin. The next day the temperature rose to 105°, pulse to 152; she vomited constantly; in the afternoon became pulseless and unconscious and died at 8 P.M., a little more than twenty-four hours after the injection. There was no autopsy.

DR. THEOBALD SMITH: The very thorough paper of Dr. Brown suggests many questions concerning the subject of immunity in tuberculosis, which still await solution. Of the two phases he has dealt with, that regarding the diagnostic value of tuberculin can scarcely be open to question, since there is so much experimental evidence gathered from the use of tuberculin on the lower animals. The second phase, the therapeutic value, has no such experimental basis to rest on and there is still room for differences of opinion concerning the degree of bacterial immunity which its continued use may induce.

It may be taken for granted that the old tuberculin is far behind heated tubercle bacilli themselves in immunizing power. Recently, while carrying on a series of experiments on the vaccination of calves against tuberculosis with human tubercle bacilli, I was struck with the very feeble immunizing power of large doses of bovine tubercle bacilli, killed at 60° C. I had anticipated more efficiency than this, and it again raised the question in my mind that if the entire bacilli, killed at a very low temperature, have so little immunizing power, what can be expected of tuberculin, the boiled extract?

DR. VINCENT Y. BOWDITCH: I speak as one who held for some time an ultra-conservative, possibly foolishly conservative, position, after using tuberculin at the Carney Hospital in a few cases, during what Dr. Brown has called the "delirium," when Koch first introduced it to the profession years ago, and after which I determined to drop its use entirely until I had heard more from Koch. For years I could not conquer the repugnance I felt for its use, but finally yielding to the opinions of those in whom I had confidence, like Trudeau, Baldwin and Brown, I again began to use it, feeling that I might possibly be withholding something which would benefit my patients.

During my service at the Rutland Sanatorium I began its use, both diagnostically and therapeutically, but it is at the Sharon Sanatorium that Dr. Griffin and I have been able to watch the effects of the substance most closely. When we began its use therapeutically, we tried it only on those who had first undergone the ordinary hygienic methods of treatment, and who after a number of weeks had reached a stage where there seemed to be no further progress towards arrest of disease.

Simply to emphasize our position, allow me to speak of two cases. The first was in a young woman from Providence who had been discharged from the sanatorium several months before with all the symptoms arrested, after the usual hygienic treatment; that is, she was without cough or expectoration, and had every appearance of health. As this result was unexpected, owing to the fact that both lungs were affected, one being quite markedly so, I fully expected a relapse under ordinary conditions of life. This occurred a few months later, and she again applied for admission. For three months the same hygienic treatment was employed with quite marked improvement in general condition, but the cough and expectoration persisted and the patient was discouraged. We then decided, with the patient's free consent, to try tuberculin (Koch's old tuberculin, supplied by the Saranac Laboratory). For the first month the cough and sputa (loaded with bacilli) increased markedly, and we feared for the result, but at the end of that time marked improvement began, and at the end of six months, all signs of cough and expectoration had disappeared, and the patient was the picture of health, and she was again discharged as an "arrested case" and resumed work at home. At latest reports, about three years after discharge, she was working hard without any return of abnormal symptoms.

Another case in the same year (1905) was one of a young married woman with signs of disease in both lungs and later in the larynx. In spite of ordinary hygienic treatment, she was steadily losing ground at the end of a few months. She was placed upon tuberculin treatment without avail for the first month, with rather an increase, if anything, of her symptoms. After the first month of treatment, however, the symptoms lessened, and at the end of six months from the first dose of tuberculin, she left the sanatorium fat and well, without symptom of cough, or sputa, the larynx again normal. She has also up to the present winter remained apparently well. What the future will develop in these cases, of course no one can say, but the results thus far have been certainly impressive and suggestive of something more than mere coincidence.

These cases are similar to others which we have treated in the same way. We have, as a rule, waited to see the result of hygienic treatment alone before trying tuberculin, but have been encouraged now to begin somewhat earlier than before. We can truly say that in no case have we seen any persistently deleterious effects, although in one or two, on account of some abnormal symptoms, we discontinued its use.

My position, and I know I may say that it is the same with Dr. Griffin, is that I have been greatly impressed by the results in the majority of cases in which we have used tuberculin, but that neither of us is yet wholly convinced of its efficacy, but are certainly encouraged to go still further. The test of years in a larger number of cases will be necessary to confirm what now seems encouraging.

Now may I speak on one point with regard to the diagnostic use of tuberculin? I may be wrong in my position, and if I am I shall be glad to have it proven. I refer to what I must term as the rather loose methods, whether in out-patient clinics, dispensaries, or elsewhere, of reporting cases as having had "reactions," when only the patient's word has been taken in describing symptoms, without any supervision whatever. We all know what "suggestion" may do in the case of a nervous patient, and if he be told that certain symptoms indicate a "reaction," it is quite possible that he may feel those symptoms when no definite reaction is present. I must regard such methods as unwise, unscientific, and unjust to the patient. Surely in such a momentous decision as to whether tuberculosis is present or not, too great care cannot be exercised in watching the patient closely during the test. We certainly have not got so far beyond the experimental stage with tuberculin as to warrant anything other than great caution and judgment in its use.

I desire to express my personal thanks to Dr. Brown for his admirable paper.

Dr. George S. Derby: My experience with tuberculin has been confined entirely to its use in the diagnosis and treatment of diseases of the eye and in this field it has been of the greatest value. Five years ago tuberculosis was thought to be a rather unimportant factor in the etiology of ocular disease, while now we are just beginning to realize how often it is responsible for the recurrent and chronic inflammations of the eye. The employment of tuberculin for diagnosis has thrown much light on the causation of many of the obscure, long-standing inflammations of the cornea, sclera and uveal tract, formerly supposed to be due to syphilis, rheumatism, gout, auto-intoxication, etc. It has led to a rational method of treatment of these patients instead of the empirical method of shutting them up indoors and filling them full of mercury, iodide, salicylates and the like.

For the past three years I have had some experience with tuberculin, principally in the Eye Ward and Out-Patient Clinic of the Carney Hospital. For diagnostic purposes we used injections up to about six months ago, since then we have tried the ophthalmo-reaction on about 50 patients, and we are using it now as a routine in selected cases. The work done thus far is too limited to allow definite conclusions to be drawn.

In making use of the ophthalmo-reaction with eye patients we are at a certain disadvantage, because we can only select those who have one normal eye, the only exception to this being where a diseased eye has been removed. I have had one such case in which we got a very typical reaction in the empty socket. On the other hand the reaction is of great advantage in our patients seen in the very early stages of the disease, who cannot be persuaded that their condition is serious enough to warrant spending a week in the hospital and submitting to tuberculin injections.

My small experience leads me to the generally accepted view that this method of using tuberculin is not as sure as the injection method, but it is sufficiently sure to be of great practical value. I have seen reactions only in those cases in which tuberculosis was indicated either by the clinical picture or by the history. We began by using the tuberculin prepared by Dr. Baldwin, which was kindly furnished to us by Dr. Hawes and Dr. Floyd. More recently we have used the Gilliland preparation in 1% strength, and my impression is that it is at least as efficient as the Baldwin Solution No. 2. With the Baldwin Solution No. 1 we were not so successful in getting reactions as with the higher concentrations, but not infrequently with the latter the reactions are unnecessarily severe. Where possible I think the best method is to try the weaker solution and in case of no reaction use the stronger one afterward.

In regard to the time of reaction, I saw none of my first 20 cases earlier than twenty-four hours after the instillation and, since this might have given the reaction time to disappear, the later cases have been seen in from six to ten hours and then again at the end of twenty-four. In no case was there a reaction apparent at the first visit which disappeared in twenty-four hours. I believe it is important to observe the patient for several days as there have been two delayed reactions in my series which did not come on until after forty-eight hours. Instead of disappearing in twenty-four hours our reactions have usually lasted two or three days in the form of a mild conjunctivitis, and there have been two of considerable severity which have lasted over several weeks. There is one case now under observation where the reaction was severe and caused a slight involvement of the cornea, which is now subsiding. One case in which, unknown to us, the eye had previously been diseased, developed a mild scleritis.

My experience with tuberculin injections for treatment is even more limited. I have followed about a dozen cases, none of them much longer than two years. We began by giving the injections ourselves at the hospital, but soon came to the conclusion that tuberculin administration had better be carried on by some one who was making a specialty of that work, and not intrusted to the average interne. I have been much impressed with the amount of care needed in regulating the dosage so as not to get a reaction, especially in these eye cases, for the eye appears to react very quickly to an overdose. Lately we have referred most of our cases to Dr. Hawes and Dr. Floyd at the Massachusetts General Hospital. Practically all these patients have done well, though it is too soon yet to regard any of them as cured. I feel that a great deal of their improvement is due to the hygienic treatment which they are getting. Just how much good the tuberculin is doing I do not think any one can say. Properly administered, I feel sure that it does no harm and I shall certainly continue to advise its use in these cases.

Dr. John B. Hawes, 2d: My experience with tuberculin, both in diagnosis and for therapeutic purposes, has come from its use in the Suburban Tuberculosis Classes conducted at the Massachusetts General Hospital. These classes were started in the fall of the year 1905. At first only cases of pulmonary tuberculosis were referred to us, but gradually the clinic has grown so that at present the number of non-pulmonary cases probably exceeds those in which there is only involvement of the lung.

Shortly after this clinic was formed, at the suggestion of Dr. Trudeau, I commenced the use of tuberculin. This we have obtained and are still getting, through the kindness of Dr. Trudeau, from his laboratory at Saranac Lake. The methods of administration, dosage, etc., have been already fully described. Very early in using this tuberculin, a bouillon filtrate, I became convinced of its power and formed a most hearty respect for it. I remember one patient, a case of advanced phthisis, who had a distinct reaction after an injection of 1-10,000 of a mgm. I have never, during the two years that I have constantly used this tuberculin, seen any harm come from its use, and the number of reactions which have caused even the slightest discomfort or malaise have been very few indeed. I fully realize that two years' experience with tuberculin is far too short a time and that my cases are far too few in number on which to base any very definite conclusions. I can merely give a preliminary report and my impressions on the effect of this tuberculin on the various forms of tuberculous disease.

Our patients who have been treated with tuberculin, and this includes the great majority of those who have been under observation any length of time, may be divided into the following classes:

1. Cases of open pulmonary tuberculosis in adults and children.
2. Cases of tuberculosis, chiefly in children, still in the closed stage or in what is called by the somewhat indefinite term, the "pretubercular" stage. This group includes many children of tuberculous parents, who have reacted to tuberculin and who have shown by all the signs — fever, pallor, loss of weight, emaciation, etc., — that they are good candidates for the disease.
3. Cases of tuberculous glands, mostly in children, many of whom have been operated on and have discharging sinuses or a recurrence of the glands.
4. Tuberculosis of the skin.
5. Tuberculosis of the eye.
6. Tuberculosis of bones and joints.
7. Tuberculosis of various organs, such as the bladder, prostate, kidneys, etc., with or without discharging sinuses.

These cases, which in all approximate about 100, have received tuberculin over periods extending from two years to as many months. We have expected and have seen very little effect from the tuberculin during the first four or five months of its administration. In regard to what has been accomplished by its use I can say at once that certainly no harm has been done in any case. No quiescent process has been lighted up; there have been no hemorrhages and practically no constitutional disturbances. Because of the fact that the pulmonary cases and some of the non-pulmonary cases have made radical changes in their method of living, i. e., have given up their work, slept out of doors, etc., it is, of course, impossible in many instances to say that any immediate improvement is due to tuberculin. Certain other patients, however, especially those who seemed perfectly well and strong and were without fever or other signs of a general infection, have kept at their work and have merely reported once a week for tuberculin. In the majority of these cases there has been decided improvement; this improvement I firmly believe is due to the tuberculin. Among the children, especially those with tuberculous glands, with or without sinuses, in almost every case the improvement under the administration of tuberculin has been more marked than I can explain, by the changes made in home conditions. I believe that in these cases there can be no doubt that tuberculin has a definite, specific, beneficial effect.

The patients have all lived at home and have come to the class once a week. They have all, at the beginning of treatment at least, kept a record of their daily life, of their pulse and temperature, and have made a note of how they felt during the days following an injection. They have also been visited in their homes by a nurse or a volunteer visitor. Thus while we have not had them under as careful consideration as we should like, we have been able to follow them fairly closely. The opsonic index has not been taken in any case. We have not the assistants, nor the time, nor the facilities necessary for this. Moreover, I am strongly of the opinion that careful watching of every symptom, however slight, is all that is necessary and, indeed, is the most accurate guide we have to determine the proper amount of tuberculin needed. We have not hesitated to cut down the dose, to repeat the same dose as given last time, or to omit a dose where the patients showed the slightest symptoms of intolerance, and to this I believe is due the fact that during the past two years we have had no untoward results.

My general impression after two years' rather close study of the effect of tuberculin is that the least we can do is to see that it does no harm; that it is a very powerful agent and one which it is not yet safe for the general practitioner to use. It must be given in selected cases and the effects watched very carefully. It is quite evident that the younger the patient the more striking are the results obtained. It is equally clear to me that the non-pulmonary cases react to it far better than those with pulmonary involvement; how great its effect will be in preventing relapses, etc., in the lung cases, from my own experience, I cannot yet say. I believe that tuberculin does do some good; exactly how much I do not know, but I shall certainly continue using it on my patients.

I wish to state here that in addition to supplying us with tuberculin, Dr. Trudeau has been a constant source of inspiration to me, and the advice and counsel which he has given me in regard to the use of tuberculin, and the various problems that have arisen, have been invaluable. I am deeply grateful to him, and no one can appreciate more than I the value of the work which has been done during the past fifteen years at his laboratory.

DR. CLEVELAND FLOYD: In the diagnosis of such a multiform and wide-spread disease as tuberculosis, it is frequently necessary to employ every means at hand to come to a definite conclusion. The routine of family history, clinical symptoms and physical examination have been and should continue to be our chief guide in arriving at a correct diagnosis. Frequently, however, after a careful consideration of these methods, there are still many cases that will require the use of tuberculin to enable us to come to a definite conclusion in a case. This test, however, is one that has great possibilities for harm and I would emphasize the point that it should only be used as a last resort and by one knowing its dangers.

With the advent of the more simple means of using tuberculin, the new danger that confronts us is that we shall be tempted in the future to neglect the older methods, that is, repeated physical examinations and repeated sputum examinations for the simpler and quicker tests. Also it will not be difficult in the future to detect minute traces of tuberculosis by this means, but the difficulty will be in deciding which cases reacting to tuberculin should carry out a sanitarium treatment or whether they are able under careful observation to continue at work and live at home.

The use of tuberculin subcutaneously has been put into extensive use by us in the out-patient department of the Massachusetts General Hospital. We have employed the system of graduated increasing doses with uniform good results. The patients have reported to us at four days intervals and then have returned home or back to work and have continued this until the test was completed. In this series of cases we have only observed two violent reactions which were temporary in their constitutional effects. We have not had the unfortunate experience that has occurred at some other clinics, when, on the day set for reaction, influenza or tonsilitis has intervened and jeopardized the accuracy of the test. In regard to the use of tuberculin in Addison's disease, I would add to the two cases already reported this evening two others, in which after tuberculin was given diagnostically, a fatal result occurred. I think, therefore, I may add this disease to the list of diseases given by Dr. Brown this evening, where the use of tuberculin is contra-indicated.

Besides the two methods of giving tuberculin cutaneously by scarification and puncture, I would add a third method recently reported, which consists in the use of tuberculin ointment. Equal parts of lanolin and old tuberculin are worked up together and the ointment rubbed into a small area of the skin, preferably the abdomen, for a diagnostic test. In two days, in tuberculous individuals, a typical erythematic eruption occurs, later followed by papules, lasting about a week. Moro reports a series of 80 cases recently tested by this means, in which the results were controlled by other chemical and physical tests, with a uniform accuracy in the results. This test gives us still further means of using tuberculin cutaneously.

The use of the conjunctival reaction of Calmette has been, in my hands, the simplest and least troublesome means of using tuberculin for diagnosis. In a series of 400 infants, children and adults, not only in suspicious and proven cases of phthisis, but in acute diseases, as typhoid fever and pneumonia, in normal persons in tuberculosis of glands, bones, kidneys and peritoneum, the results have been very satisfactory. The accuracy of the test has been frequently verified by other chemical and clinical means. In no case in this series have I observed the least harm to the individual. The reactions have in only rare cases been severe and with no permanent injury to the eye. Only once or twice have I seen constitutional symptoms. In a few cases the reaction has been delayed for forty-eight hours, at which time the conjunctiva presented a picture of a typical reaction. Cases, however, are being reported where interstitial keratitis and ulceration of the cornea have occasionally occurred, following the use of this test. It is, therefore, by no means harmless, and a careful examination of the eye is demanded in order to safeguard the patient.

Wolff-Eisner has recently laid considerable stress on the prognostic value of this test, and my series of cases seems to bear him out. He says that the more severe the conjunctival reaction, the more favorable the prognosis, as it shows that the body is actively resistant to the disease. This I have frequently seen to occur in the incipient where the prognosis was good. The moderately advanced and advanced cases of tuberculosis, as a rule, show only a moderate reaction and frequently none at all, going to bear out the supposition that the prognosis is unfavorable. The delayed reaction probably denotes some latent focus of tuberculosis and may simply be used as a warning to the patient to maintain the best of health.

With these simple and less harmful methods of using tuberculin, it would seem possible in the future that the great burden of the advanced case might speedily be done away with and many a case of early phthisis be discovered in its incipiency with lasting benefit to the patient.

In regard to the therapeutic use of tuberculin, I would say that my experience at the Samaritan Day Camp has deeply impressed me with its value. In some 25 pulmonary cases arrested by treatment, many of whom have been well from several months to a year and a half, and working in shop and factory, where the disease is contracted, only 1 case has relapsed. These cases report to me every three weeks and the use of tuberculin therapeutically has been continued constantly. The results as compared with other methods of treatment in this city make me hope that tuberculin used therapeutically in a common sense way may be a great aid in preventing relapses in the arrested case.

Dr. Wright: The experience which I have had in this treatment of tuberculosis has been largely with the nonpulmonary type. In cases at our hospital we have had repeatedly certain cases of tuberculosis which have shown no improvement either from hygienic or other measures. There have been a number of cases where there has been a steady decline in the wrong direction. In quite a number of severe cases from a short time after this treatment was begun improvement has been shown. This has been very true in some cases of tuberculous peritonitis and other cases which I will not cite. What has also interested me has been the study of Addison's disease, which has been treated with unfavorable results. I have had and now have under observation a case of Addison's disease which we are treating therapeutically with tuberculin. The results are now that the man has no sign of the disease, except markings on the skin, and this is slowly disappearing. The patient is now working and says he is feeling perfectly well.

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AMERICAN NEUROLOGICAL ASSOCIATION.

The 34th Annual Meeting of the American Neurological Association was held at the College of Physicians, Philadelphia, on May 20, 21 and 22, 1908.

Morning Session, May 20.

Dr. Charles W. Burr, the President, called the meeting to order at 10 a.m.

The President delivered his address entitled,

MENTAL STATE IN CHOREA AND AFFECTIONS SIMILAR THERETO.

Burr said he had chosen this subject because it is of interest in itself and because the study of mental symptoms in physical disease will throw some light upon the nature of the insanities. For example, the study of the mental state in typhoid fever throws some light on the clinical occurrence of delirium. It is unfortunate that the word chorea cannot be dropped from use. It includes such diverse conditions that it carries with it no clear meaning. Sydenham's chorea is a separate and distinct disease which probably has a specific exciting cause. The majority of patients affected with this disease are entirely sane throughout the course of the disease, although even mild cases show peevishness, fretfulness, loss of power of attention and selfishness. A second grade shows night terrors and hallucinations; a third, distinct delirium with fever; a fourth, stupor and an acute dementia. Patients of the first and second groups almost always fully recover; of the third group, frequently die; and of the fourth, either die or remain demented.

Dr. Frank R. Fry, Cincinnati, reported a case of progressive left hemiplegia with the Jacksonian phenomenon but absence of sensory or tumor symptoms. On autopsy there was found a glioma of large size in the right centrum reaching into the immediate subcortical position. (No discussion.)

Dr. J. H. W. Rhein, Philadelphia, read a paper entitled,

A CASE OF CORTICAL BLINDNESS EXHIBITING APRAXIC SYMPTOMS. DISCUSSION OF APRAXIA.

The author presented a report of a man of fifty-five, who was ill for three years and developed progressive loss of eyesight together with inability to recognize the position of his body or limbs; loss of the sense of location; loss of tactile and temperature sense in the left hand. Stereognostic perception was impaired on both sides. There was no palsy but the left hand and arm were contractured and could be moved only reflexly. There was gradual mental failure toward the last and finally death from exhaustion. Autopsy revealed an area of softening in the cortex in the occipito-parietal region on the right side of the brain. Sections showed degeneration in the white matter of both occipital lobes and part of the parietal lobes.

DISCUSSION.

Dr. Joseph Collins, New York, said this case had once been under his care and that he considered that the case presented all the clinical manifestations of a type of arteriosclerosis which has not been definitely described and which resulted in cerebral softening. He thought the areas of softening described would account for all the objective and subjective signs. He asked whether the autopsy showed arterial lesions and whether serial sections had been made of the brain ganglia and how much degeneration existed.

Dr. A. Gordon, Philadelphia, said that in hemiplegia of cortical or subcortical origin there is frequently change of function in the opposite side and asked whether a systematic study of the corpus callosum had been made.

Dr. Rhein said in closing that there was a general arteriosclerosis. The microscopic lesions of the brain were rather those of perivascular distention and infiltration. This was also present in the white matter which showed degeneration. The corpus callosum was carefully studied.

Dr. Hugh T. Patrick, Chicago, read a paper entitled,

TREATMENT OF FACIAL SPASM BY MEANS OF INJECTIONS OF ALCOHOL. REPORT OF THREE CASES.

Patrick reported 3 cases of facial spasm which he had treated by injection of alcohol into the seventh nerve trunk. Two showed good results and in the third there was failure to reach the nerve. Fifteen drops of a 40% to 50% solution of alcohol is injected by means of a hypodermic syringe with a needle of medium length into the trunk of the nerve just in front of the mastoid over the stylomastoid foramen. The nerve is not easy to locate. As soon as the alcohol strikes it there develops complete facial paralysis which disappears in several months and which is not nearly so annoying to the patient as the spasm. In neither of the author's cases did the spasm return after recovery from the paralysis which resulted from the treatment.

DISCUSSION.

Dr. J. J. Putnam, Boston, asked whether Dr. Patrick considered that the injection of the alcohol induces a special pathological condition of the nerve and how he explained the result.

Dr. A. Gordon, Philadelphia, asked whether the author had had any experience in treating in this way spasms following Bell's palsy.

Dr. H. M. Thomas, Baltimore, asked how long the spasms had existed in Patrick's first case. He had seen a number of cases of operation for facial spasm and thought the palsy which resulted as bad as the spasm. The only case he had seen cured was one of anastomosis with the spinal accessory nerve done by Dr. Cushing. In this case emotional power of motion returned before voluntary power, a phenomenon he could not explain.

Dr. G. L. Walton, Boston, emphasized the presence of other obsessive tendencies in the victims of tic. Sufferers from spasm may be also neurotic but not necessarily obsessive. He also spoke of the importance of carefully correcting refractive error before resorting to direct attack upon the seventh nerve. He mentioned an obstinate case of many years' standing completely cured by a final adjustment of glasses and muscular exercises for insufficiency.

Dr. Charles E. Beevor, London, England, asked if there was any twitching when the needle enters the nerve. He thought, as the nerve is a motor one, there ought to be twitching as soon as the needle enters it.

Dr. J. Ramsay Hunt, New York, asked if Dr. Patrick had found any etiological factor in these cases. He thought it might be reflex, for in going over the literature he found that many cases showed some auditory disturbance, aneurysm pressing upon the facial nerve or some such cause. He thought that part of the seventh nerve might be sensory and thus convey the afferent impulses.

Dr. W. G. Spiller, Philadelphia, considered the cases of which Dr. Patrick spoke to be cases of peripheral facial palsy. When regeneration occurs connections of nerve cells take place which are different from those which previously existed, and in this way cells become connected with the upper or lower branches of the facial nerve which were not in contact before. This accounts for the fact as noticed that the facial spasm is always synchronous with closing of the eyelids. He had tested this many times and always found it so.

Dr. J. J. Putnam, Boston, said he wished to express his acquiescence in what Dr. Spiller had said.

Dr. Patrick, closing, said that he does not know how alcohol acts. In answer to Dr. Thomas he stated that his first case of facial spasm was of ten years' standing. He does not put forward the alcohol treatment as a radical cure nor does he claim originality for it. If spasm returns after the palsy vanishes he could see no objection to repeating the treatment. The muscles did not twitch when the needle was inserted nor was he sure if he had touched the nerve or not. He knew nothing of the etiology in his cases.

Dr. Alfred Gordon, Philadelphia, read a paper entitled,

A SPECIAL DIAGNOSTIC PHENOMENON IN THE ATTITUDE OF THE HEAD IN CEREBELLAR DISEASES.

He said that a certain position of the head in cerebellar diseases is not infrequent. Very often the head is inclined towards the side of the lesion. It is of importance when cranial nerve symptoms are absent. The writer has observed in six cases, four of which came to autopsy, the following phenomenon: During the course of the disease and sometimes at the beginning, the head changes its position. Then when it is forcibly turned to its former position, vertigo and pain in the head ensue. The autopsies of Gordon's cases proved that the phenomenon is of diagnostic value, as when it occurs it enables us to determine the seat of the tumor.

DISCUSSION.

Dr. Joseph Collins asked in what way the position of the head described by Dr. Gordon differed from that described by Hughlings Jackson twenty-eight years ago.

Dr. W. C. Krauss, Buffalo, N. Y., said he had seen cases in which this position of the head was present to a remarkable degree.

Dr. M. Allen Starr, New York, said that twelve or fourteen years ago he had made a collection of 40 cases of cerebellar tumor in order to determine whether the direction of the staggering gave any clew to the side of the tumor. In one third of the cases the patient staggered toward the side of the tumor and in two thirds away from the tumor. Since then he has collected others until now he has a series of 100 cases and has come to the conclusion that the direction of staggering gives no clew to the location of the tumor.

Dr. Frank R. Fry, Cincinnati, said that a few years ago he had reported a case of frontal lobe tumor which gave all the signs of a cerebellar tumor. He thought the symptoms due to pressure of the cerebellum against the rim of the foramen magnum.

Dr. Philip Coombs Knapp, Boston, said that in a good many tumors in different parts of the brain a change in the position of the head will cause increase in dizziness and headache. The head is apt to be turned to the same side as the tumor so as to bring the tumor into the lower portion of the cranial cavity and thus lessen the pressure on other parts of the brain. In cerebellar tumor where ordinarily these symptoms are more marked they would be exaggerated by change in position of the head.

Dr. J. Ramsay Hunt, New York, said he had observed 2 cases of cerebellar softening in which the head was fixed, and he thought this was done to compensate for loss of cerebellar function. He has never been able to determine any fixed position of the head which could be used as a localizing factor.

Dr. C. E. Beevor, London, England, thought the position of the head so very uncertain that it was not of much value for diagnostic purposes. In a very large number of cases there was no characteristic position of the head.

Dr. J. H. W. Rhein, Philadelphia, said that the position of the head is not pathognomonic.

Dr. T. H. Weisenburg, Philadelphia, said that he has recently collected a number of cases of cerebellar tumor and in most of the cases the cerebellar attitude was of no value. In 2 cases there was diplopia and the patients held their heads in this position to avoid this symptom. When paper was held over their eyes the position of the head was changed.

Dr. Gordon, in closing, said that what he wished to emphasize was that in case of cerebellar tumor the head is first inclined to one side but later inclines to the other side and that the side to which the head latterly inclines is the side of the tumor.

Adjourned 11.50 a.m.

Afternoon Session, Wednesday, May 20.

The meeting was called to order at 3 p.m., by President Burr.

Dr. B. Sachs, New York, read a paper entitled,

TWO CASES OF APHASIA RELIEVED BY OPERATION, AND THEIR BEARING ON MODERN THEORIES OF APHASIA.

Dr. Sachs' first case was a man of thirty-eight, who had fallen, striking his head on the right side. Opertion was performed over the site of the fracture but the patient continued unable to talk. The writer saw the patient five months later and advised operation on the left side. This was done and a cyst removed from the third frontal convolution. By re-education the power of talking has been fully restored. The second case was a woman of forty-two who was found suffering from typical sensory aphasia with other evidences of organic brain lesion. Operation was performed in the left temporal region and abscess found in the temporal lobe. Within a week the aphasia had entirely disappeared. The writer thought that in practice the traditional lines in reference to aphasia should be followed.

DISCUSSION.

Dr. H. M. Hoppe, Cincinnati, reported the case of a man who after injury gradually developed partial sensory aphasia. On operation a small spicule of bone was found under the temporal muscle and around it a cyst pressing upon the temporal lobe. The patient improved after the operation but never completely regained the power of naming objects.

Dr. Joseph Collins, New York, said that he considered Dr. Sachs' first case not one of aphasia but one of anarthria.

Dr. Joseph Fraenkel, New York, said that Dr. Sachs' first case had been studied by him and that it was plainly one of motor aphasia. There was no evidence of paralysis. He thought the case taught that we must still adhere to traditional lines in reference to aphasia.

Dr. Adolph Meyer, New York, thought that speaking of points of vulnerability of the speech mechanism and the exact site of speech mechanism were two entirely different things and should not be confounded.

Dr. Sachs, in closing, said that he did not think his cases could be used in illustration of the difference in view between Marie and Dejerine in reference to aphasia and that he did not have that intention in presenting them. He insisted that his first case was one of aphasia and not anarthria as Dr. Collins claimed.

Dr. Charles E. Beevor, London, England, read a paper entitled,

THE CEREBRAL DISTRIBUTION.

Dr. Beevor related his experience in injecting the various blood vessels of the brain with soluble colors under uniform pressure and illustrated his results by means of lantern slides. The pressure was maintained by means of pressure bottles the canulæ entering the various arteries being fed by way of the color bottles from a several-way tube which formed the outlet of the pressure bottle. At various times 2, 3, 4 or 5 of the arteries of supply to the brain were injected simultaneously. The injections were made in the fresh brains which were afterward hardened in formalin. The author has been doing this work for the past six years, and has successfully injected and studied about 80 brains.

DISCUSSION.

Dr. M. Allen Starr said that he thought the members were extremely indebted to Dr. Beevor for his beautiful demonstration and wonderful specimens. A great many of the points, and especially the distribution of the vessels to the internal capsule and the basal ganglia, were quite new to him and that the work reported should appeal to all as being a very valuable original contribution to the subject.

Dr. H. T. Patrick, Chicago, thought one could be impressed to the proper degree with the originality of the idea and the patience and skill required only when he had an opportunity to look over Dr. Beevor's entire collection of brains and see how uniformly successful the results have been.

Dr. J. J. Putnam, Boston, asked Dr. Beevor if he had attached any functional significance to this distribution of the vessels.

Dr. Adolph Meyer, New York, asked whether any studies had been made in reference to anastomosis of the various arteries and the possibilities of supply in case of occlusion.

Dr. Joseph Collins, New York, asked if there was anything in Dr. Beevor's investigation which would indicate the distribution of the end arteries.

Dr. Beevor, in closing, said he did not think the distribution had any functional significance but was purely anatomical. In reference to anastomosis and end arteries he said that the basal arteries are certainly end arteries; others are anastomotic. However, there is very little communication between the various branches of the same artery.

Dr. H. H. Donaldson, Philadelphia, read a paper entitled,

THE WEIGHT OF THE BRAIN AS INFLUENCED BY NUTRITION OR DISEASE.

The author reported his experiments with the brains of white rats and compared these results with those observed in man. It was found that the normal brain weight begins to decrease early in life, in man in the eighteenth or twentieth year. In disease the loss of weight is greater in chronic than in acute diseases. While the loss in weight of the other tissues of man in disease amounted to 24%; that of the brain was only 3%. As a result of improper nutrition in otherwise healthy subjects the brain weight was reduced 4%. There was no loss in the spinal cord in either case.

DISCUSSION.

Dr. J. J. Putnam, Boston, asked upon what structure in the brain the loss chiefly falls, — whether upon the nerve elements or the myelin sheath.

Dr. B. Sachs asked if the loss in brain weight was greater or less than that of other organs, or whether the brain simply partakes in the general deterioration of nutrition.

Dr. Donaldson, in closing, said that the only element of the loss studied was the amount of water which was found to be greater in amount in the diseased or poorly nourished brain. He said that the whole reason for the inquiry was to show the truth or falsity of the general belief that the brain is unaffected by general disturbance of the body. The loss is more than in the skeleton but less than in the muscles. No comparisons had been made with other viscera.

Dr. E. C. Spitzka, New York, said that in the study of brains of distinguished men allowance had repeatedly been made for a decrease in weight up to 150 gm.

Drs. Charles K. Mills and **Charles H. Frazier**, Philadelphia, read a paper entitled,

A BRAIN TUMOR LOCALIZED AND COMPLETELY REMOVED, WITH SOME DISCUSSION OF THE SYMPTOMATOLOGY OF LESIONS VARIOUSLY DISTRIBUTED IN THE PARIETAL LOBES.

The authors reported the case of a woman forty-five years of age, in whom the dominating focal symptoms were left lateral homonymous hemianopsia and hemiataxia, the latter especially in the upper extremities. There were slight hypesthesia, hypastereognosis and hemiparesis. The general symptoms were double optic neuritis, headache, occasional vertigo, nausea and vomiting. Some mental apathy and marked depression were present. A large parietal osteoplastic flap was raised and at the upper back part of the opening a large cyst revealed. This was emptied and the entire sac removed. The patient made a good recovery from the operation. All focal symptoms disappeared but the hemianopsia which is gradually improving. The optic neuritis subsided slowly.

DISCUSSION.

Dr. B. Sachs, New York, said that in 4 cases of his in which the tumor could not be located as there were no localizing symptoms, the optic neuritis was improved very much by exploratory operation. He believes in exploratory operation in cases where the tumor cannot be localized.

Dr. Chas. E. Beevor congratulated Drs. Mills and Frazier upon their splendid results. He said he had had a case very much like this one on which Victor Horsley operated. There was improvement but the hemianopsia persisted. The difference, he thought, was due to the depth to which the tumor extends. If it extends deeply and destroys the optic radiations there will be no improvement in the hemianopsia.

Dr. J. J. Putnam reported a case of endothelioma of the cerebellum operated upon with removal of the tumor and who continued to do well five years after the operation. In a case of hemiauopsia in which the tumor was at the base of the brain, involving the fifth nerve on both sides, a decompression operation gave excellent results.

Dr. M. Allen Starr said he was in favor of decompression operation. He has had excellent results in 2 cases recently. There are cases which result in large hernias and death; but if one in ten can be saved the operation is justifiable. He agreed that brain operations should be done in one stage and that the surgeon should do everything to hasten the operation and diminish shock.

Dr. Theodore Diller, Pittsburgh, said that he also was in favor of decompression operation. He had had a patient recently who showed 7 diopters of optic neuritis. Ten days after operation the patient was completely relieved of headache, and although his vision was only 5-200 before the operation, he could afterward read a typewritten page.

Dr. Mills, in closing, said that he is in favor of decompressive operation, but that this case was presented, not as one of decompression, but of radical cure.

Dr. Charles H. Frazier, Philadelphia, said, in closing, that he quoted the statistics which place the operable tumors at 6% because he thought that the opinion of the medical profession, but that in his own case the operable tumors were 15% to 20%.

He believed that if we would explore more routinely, we would find the tumors oftener than we do and that we would find them earlier and thus get a greater percentage of operability.

Dr. Theodore Diller and **Dr. George J. Wright**, Pittsburgh, presented a paper entitled,

HYSTERICAL INSANITY WITH REPORT OF SOME ILLUSTRATIVE CASES.

Dr. Diller, who read the paper, said that hysteria may express itself chiefly by mental symptoms constituting a psychosis which may counterfeit the various other psychoses more or less closely; and this occurs more frequently than is commonly supposed. The recognition of hysterical insanity is important, both from the prognostic and the therapeutic points of view.

Inconsequential answers to which Ganser directed attention have done much to aid in the diagnosis and to create interest in the subject of hysterical insanity. Inconsequential and paradoxical conduct is often seen and is of great diagnostic value. On the negative side hysteria presents a psychosis which does not conform to the pattern of any of the ordinary insanities. The theatrical and dramatic features seen in hysteria generally are to be observed in the hysterical psychoses. Some illustrative cases are presented.

(To be continued.)

Book Review.

Aids to Osteology. By Philip Turner, B.Sc., M.B., M.S. (Lond.), F.R.C.S. New York: William Wood & Co. 1908.

This small volume is one of the Students Aids Series dealing with osteology. The descriptions of the bones are taken from standard anatomical works and are somewhat unexpectedly complete. considering the general modesty of the book. The lack of illustrations must be regarded as a defect. To picture a complicated bone from a description alone is a practical impossibility.

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ARCHITECTURAL UNIFORMITY.

A VERY just criticism of much of the architecture of this country is its failure on the one hand to conform to any definite type, and on the other, when a group of buildings is concerned, to attain uniformity and harmony in construction. As one looks over university buildings, for example, throughout the country, one is impressed with the fact that usually no distinct design has governed the erection of the succeeding buildings. The peculiar conditions existing here have in a measure necessitated this unfortunate result. The growth of our institutions has been such that repeatedly provision which at first was thought adequate for many years to come has quickly been found insufficient, and new buildings have been required to meet the increasing demand. Such buildings have too often been constructed without reference to those already existing and also without due regard to future expansion. Even in the comparatively short period over which our architectural efforts extend, types of building have changed to such an extent that complete conformity of the new with the old cannot be seriously considered, in view of the still larger question of adaptability for purposes designed and of inherent architectural effect which was too often lacking in buildings of former generations. This unfortunate lack of harmonious architectural design is certainly very much to be regretted, and particularly in those instances, which are by no means few, in which foresight and a realization of the needs of the future would have done much to obviate the most glaring defects.

There is, however, much evidence to show that with the growth of our cities and with the increased sense of civic pride, which is one of the most hopeful signs of the times, a keener appreciation of the needs of the present and of the possibilities of the future will prevail in the development of architectural schemes. Ephemeral as the architectural efforts are, which one sees in the structures erected at our great fairs, whether national or international, it is not to be doubted that the effort made to harmonize the buildings with the purposes for which they are designed and, more important than this, the effort to make of the entire group of buildings an harmonious whole has not been without influence in fostering an improved architectural taste. The Court of Honor at the Chicago Fair may be cited as an example. The feeling has certainly grown in this country that a building must be adapted, both externally and internally, for its special purpose, if one's esthetic taste is to be completely satisfied. It has happened with increasing frequency of late years that architects have been called upon to design, not only individual buildings of public significance in greater number than ever before, but also to group buildings in harmonious design, more or less closely related in function. When such an opportunity comes, it should neither be evaded nor treated lightly. Incongruous buildings, it should always be remembered, are likely not only to be an eyesore to the present generation, but to the many generations to come, whose critical taste may well be further developed than ours. We have recently in this community had a most admirable example of the possibilities of harmonious architecture when applied to a group of buildings designed for a single purpose. We refer to the recent five buildings of the Harvard Medical School. In this group the whole design was most carefully considered, with the result that each building, complete in itself and well worthy to stand alone, is nevertheless an integral part of the entire group, which as a group would suffer were any of the five units to be removed. Here, then, is an example of an opportunity accepted with a full realization of the significance of the result to the city, and, in fact, to that wider circle to which architectural effect is not a matter of indifference.

It so happens that in the immediate neighborhood of these medical school buildings are to be constructed three hospitals and no doubt other buildings which will be more or less definitely brought into the general group. It is a somewhat remarkable coincidence that these three institutions, independent in management, are in the first place to be erected practically at the same time, in the second place, are designed for the same general purpose, namely, the care of the sick, and in the third place, are to be in immediate proximity. These hospitals are the Peter Bent Brigham Hospital, for which something over ten acres has been provided, the Boston Children's Hospital, which will be considerably smaller, and the Thomas Morgan Rotch, Jr., Memorial Hospital for Infants, which will be still less pretentious as regards size. It is evident that, if these hospital buildings are constructed irrespective of each other from the architectural standpoint, including the laying out of the grounds, an incongruous group of buildings may well be erected which might easily prove a detriment to the general architectural effect of the neighborhood. This should not occur. With such an object lesson as the Harvard Medical buildings before them, those having the responsibility of the architectural effect of the new hospitals should have in mind, not only the excellence of the individual buildings, but also the effect of such buildings on the general scheme. In other words, there should be a general plan, carefully considered, looking toward the harmonious adaptation of these new buildings to each other and to the surroundings in which they are fortunate enough to be placed. It is quite beyond our province to suggest any definite means by which this may be brought about, whether through a supervising architect, through a special committee of qualified persons, or through the complete and willing co-operation of those to whom the construction of the several buildings is entrusted. The general change which has come in hospital construction within the last few years has been the greater insistence upon provision for open air. It is apparent that the hospital of the future must not only contain wards for the treatment of the sick, but must also provide balconies, piazzas and various other means through which patients, even in the acute stages of their diseases, may be placed in the open air and may there receive the attendance of nurses and doctors as they would within the hospital wards. All this offers a problem which must be met in the hospital construction of the future. In the case of the three institutions, which we have mentioned, this factor in construction must naturally be taken into account, with respect to the needs of the various types of patients treated, and also with respect to the demands of architectural harmony. The same applies to the laying out of the ground and to the arrangement of the innumerable details which go toward the establishment of general harmonious design. We have no doubt that the matters to which we have alluded have been seriously considered by those having these new buildings in charge. The opportunity, however, is so unique, and a failure in harmonious design would be so great a misfortune that any added attention given to the subject will not be amiss. It is doubtful whether it has ever before happened that buildings aggregating so large an expenditure, designed for the same general purpose, have been built within so short a space of time. The responsibility is great. It has been met admirably in the construction of the Medical School buildings, and it is of the greatest importance that no incongruities result from the hospitals about to be erected in their immediate neighborhood.

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EXTERMINATION OF THE FLY.

We have on previous occasions called attention to the somewhat definite attempt to eradicate the common house fly. With the advent of this pest each succeeding summer, renewed attention is paid to the problem of extermination, such as has been given with somewhat notable success to the mosquito within the past few years. There seems to be no question whatever that the fly is a disseminator of disease, and is, therefore, a positive menace quite apart from its other obnoxious characteristics. We note in a recent issue of the Buffalo *Sanitary Bulletin* a statement of the possible dangers to which we are exposed through the presence of the fly, together with an urgent appeal to obviate the breeding of flies through keeping premises free from organic matter, and to prevent their admission to the houses by proper screens. The *Bulletin* puts the situation well in the following statement:

> "The fly that doesn't wipe its feet is one of the chief elements of danger during the summer season. The fly lives, moves and thrives in dirt. It can breed only in one kind of place, and that is a heap of filth, — preferably human or animal excreta, dust bins, garbage cans, sweepings, or accumulations under porches or furniture, — any place where dirt is allowed to remain undisturbed for more than a week. Abolish or poison these dirt accumulations and flies will disappear; so will many diseases and much discomfort."

It is not necessary to go into the scientific evidence now in our possession to show that the fly transmits typhoid, and very probably tuberculosis, as was pointed out by Dr. F. T. Lord in a recent investigation regarding the rôle of the fly as a host of tubercle bacilli. This week, at a meeting of the Massachusetts Association of

Boards of Health, the subject of the discussion is to be "The House Fly as a Carrier of Disease," and there is no doubt that as a result of this discussion certain warnings against the fly and directions as to its extermination will be widely circulated. The Boston Board of Health is said also to be seriously considering the matter of regulations against flies in somewhat the same sense as efforts are now being made to exterminate the various pests which are becoming so great a menace to our trees. It is probable that the matter of the compulsory use of screens in dwelling houses will be considered, and no doubt the protection of food exposed for sale. It is evident that there is much room for improvement in this latter regard. It is unappetizing, to use no stronger word, to observe the carelessness with which meat and other food stuffs are carried through the streets and delivered at houses during the heat of summer. As in any problem of this sort, however, it is clear that prevention must ultimately take the place of cure, and that some means must be found to prevent the breeding of flies rather than to attempt their extermination after having attained the flying age. We know that flies breed in dirt and particularly in the presence of decaying organic matter. With this knowledge the moral is clear. Every householder and shopkeeper should be obliged to keep his premises clean, not in the ordinary and superficial sense, but in the way which good sanitation is gradually teaching. There is probably no harder lesson to be taught than that of scrupulous cleanliness, but it is a lesson which our boards of health and other authorities must continue to instil, in the hope that finally the public conscience and intelligence will be educated to a point of real efficiency.

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AMERICAN MISSIONARY COLLEGE.

We are in receipt of the fourteenth annual announcement of the American Missionary College, the function of which is to educate men and women for a medical missionary career. Such an institution as this recognizes the need of active medical training for those intending to take up the work of spiritual regeneration of the heathen. Whatever our views may be on the advisability of forcing a new and strange religion upon those peoples who have been without the pale of Christianity, there will hardly be difference of opinion that it is highly advisable, if such work is to be done, that the physical welfare of these people should be looked after by the best possible methods, and that through this medium much true morality may be taught. We have always felt that the medical missionary, filled with a high purpose and well trained in the art and science of medicine, must be a very much more valuable reformer than the person who attempts to reach the untutored mind through argument alone. This medical missionary college has been in existence fourteen years, and during that time in an entirely liberal spirit has attempted, no doubt with much success, to train physicians for this special work in the so-called missionary field. The college is located at Battle Creek, Mich., and in Chicago; is under the direction of a regularly appointed faculty, and numbers on its advisory council many men of distinction, among whom Sir Wilfred T. Grenfell is notable as combining in highest degree the best attributes of a missionary and a physician.

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MEDICAL NOTES.

BATTLESHIPS PASS MOLOKAI. — By request of the leper colony on Molokai, the American battleship fleet in its passage across the Pacific passed within sight of the inhabitants.

YELLOW FEVER IN CUBA. — A small number of cases of yellow fever have been reported from the province of Santiago. The disease has by no means reached the extent of an epidemic.

PLAGUE IN THE AZORES. — It is reported that bubonic plague has appeared in one of the islands of the Azores group. Upwards of a dozen cases have been observed and some deaths.

CONGRESS OF ASSOCIATION OF FRENCH PHYSICIANS. — The fourth Congress of the Association of French Physicians of America was held this week at Quebec. The object of this congress is scientific advance, together with a study of social questions of medical interest.

A PASTEURIZATION PLANT IN VIENNA. — It is stated that Mr. Nathan Straus, who has long been interested in supplying pure milk to the poor during the summer months, has given to Vienna a milk Pasteurization plant, and that the gift has been accepted. He has agreed to give others if this proves successful.

PELLAGRA IN THE UNITED STATES. — Reports are current that an American physician has identified a disease occurring largely in the South with pellagra, otherwise known as Italian leprosy or

Alpine scurvy. The affection is presumably due to the ingestion of unsound corn. In Italy the etiology has been supposed to be a poisonous maize.

The Edinburgh Medical Journal. — With the July number of the Edinburgh *Medical Journal* a new series is begun, with the incorporation with this journal of the *Scottish Medical and Surgical Journal*. The result of this combination is a journal similar in form to those of which it is now the combination. It is edited by William Green & Sons, the former editors of the *Scottish Medical and Surgical Journal*.

Effect of Cold on Blood Count. — It is announced that Dr. George M. Randall, of Lowell, Mass., will join Captain Peary's Arctic expedition at some far northern point in order to investigate certain possible peculiarities of the blood under conditions of very low temperature. It is proposed to examine the blood of certain members of the crew before they attempt to reach the pole, and also after their return, to see what, if any, alterations are shown by the extreme cold to which they will presumably be exposed.

Smallpox in the Philippines. — According to the report of the Bureau of Health, Philippine Islands, the number of cases of smallpox in those sections which have not yet been thoroughly vaccinated has been very high, the virulency apparently being much greater than is usually the case. As a rule, the mortality of smallpox among the Filipinos does not go much above 5% or 10%, but in the outbreak this time the mortality ranged from 25% to 50%. Owing to the remoteness of many sections of the Philippines and the practical impossibility of having vaccine arrive in such sections while it still retains its potency, it is not likely that a complete disappearance of this disease can be hoped for at once unless methods can be found for preparing vaccine in a manner so that it will remain potent for a longer period after leaving the laboratory.

The warnings which were given through the press during the past few months to the effect that, owing to the increasing virulence of the smallpox, an outbreak of this disease might be expected in *unvaccinated* persons toward the end of the dry season, came only too true during the closing week of the quarter. Forty-four cases occurred, with twelve deaths, all practically in persons who could show no vaccination mark. As long as one unvaccinated individual remains in a community, just so long must we expect cases and deaths from this disease to occur.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, July 21, 1908, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 64, scarlatina 25, typhoid fever 22, measles 46, smallpox 0, tuberculosis 44, cerebrospinal meningitis 0.

The death-rate of the reported deaths for the week ending July 21, 1908, was 17.86.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, July 18, 1908, was 212, against 158 the corresponding week of last year, showing an increase of 54 deaths and making the death-rate for the week 17.86. Of this number 112 were males and 100 were females; 208 were white and 4 colored; 142 were born in the United States, 65 in foreign countries and 5 unknown; 52 were of American parentage, 129 of foreign parentage and 31 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 71 cases and 2 deaths; scarlatina, 19 cases and 4 deaths; typhoid fever, 12 cases and 2 deaths; measles, 66 cases and 1 death; tuberculosis, 55 cases and 31 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 9, whooping cough 4, heart disease 13, bronchitis 3 and marasmus 8. There were 23 deaths from violent causes. The number of children who died under one year was 57; the number under five years 84. The number of persons who died over sixty years of age was 51. The deaths in public institutions were 79.

Bequests. — By the will of Miss Julia A. Baker, of Nashua, N. H., $81,000 is left to charitable institutions in Manchester and Franklin, N. H., where she formerly resided.

A Centenarian. — The death is announced of Peter Hull, formerly a slave, in New London, Conn., at the reputed age of one hundred and nine. He was born at St. John, Fla., March 23, 1799.

Examination for Medical Registration. — One hundred and thirty-five applicants for registration in medicine applied at the examination held last week by the State Board. A small proportion, eight or nine, were women.

Registration in Dentistry. — The president of the State Board of Registration in Dentistry announces that of one hundred and fifty-three candidates recently examined, ninety-two have successfully passed. This is the largest number of successful candidates ever registered in this state as a result of a single examination. Four of those who passed are from Egypt, Japan, Australia and Jamaica, respectively.

Cambridge Tuberculosis Camp. — A tuberculosis camp in Cambridge, Mass., was opened last week. This camp is provided with a building near the Belmont line and about six hundred feet from the street. The arrangement of the building is such as to give much piazza space, light and air. Ground was broken June 15 of this year; it speaks well for the energy of those having the camp in charge that it is about to be opened to patients. It is estimated that 200 can be accommodated. In this number there will be some, no doubt, from neighboring cities and towns. The camp and its equipment at an initial cost of $20,000 is expected to save a considerable amount to the city. The work is in accordance with the general plan mapped out by the National Association to check the spread of tuberculosis.

Further Provision for Tuberculosis. — In our last issue mention was made of the opening of the Brookline, Mass., day camp for children suffering or threatened with tuberculosis. Last week the Tuberculosis Association opened a similar camp on Parker Hill in Boston. It was originally intended that these two camps should be conducted together and that a locality should be used in common. This plan was, however, later changed.

The Consumptives Department of Boston has also opened a day camp at Mattapan, which will continue in operation throughout the year. The dining-room can accommodate one hundred and eighty or more, but it is probable, for financial reasons, that this year not over fifty will be taken at any one time.

Adams Nervine Asylum. — According to the last annual report of the managers of the Adams Nervine Asylum, the total number of admissions was 148, 12 less than last year. Of these, 30 had previously been patients here. The total number under treatment was 192, 16 less than last year. Four women were discharged and readmitted during the year, and one of these was a second time readmitted, thus making the 192 cases represent 187 different persons. The total number of days' board given was 17,272 (1,004 more than last year). Of these, 39% was given to free patients and 37% to those paying less than the average cost of maintenance. Seventy-six per cent, therefore, of the work of the year was for those who were wholly or in part beneficiaries of the asylum.

Hospital Corps of Massachusetts Troops. — According to the recent report of the Surgeon-General of Massachusetts, the hospital corps men attached to the various organizations previous to Nov. 15, on which date the hospital corps became a part of the medical department proper, consisted largely of physicians, dentists, medical students and pharmacists. Probably in no other branch of the service was there such a high percentage of earnest, professional men. The opinion, however, of the surgeon-general, confirmed also by the judgment of some of the most experienced medical officers, is that it would be better not to have so many professional men in the hospital corps, as the corps naturally could be rounded into a more efficient unit if it were to consist of a fair proportion of medical men, densists and pharmacists, but mainly of men engaged in other callings.

NEW YORK.

School of Hygiene at Cornell. — An arrangement has been made with Cornell University by means of which a school for sanitary science and public hygiene has been established through the instrumentality of the State Health Commissioner. The course will be begun in the fall, and instruction given by the university faculty, the State Health Department staff and certain European specialists.

A Centenarian. — Mrs. Sarah Hall Doremus, believed to be the oldest woman in the state of New Jersey, died on July 15 in Newark, at the age of nearly one hundred and five years. She was born in Spring Valley, N. J., in August, 1803, and was the daughter of an Englishman, Philip Hall. She survived her husband more than twenty-five years, and until two years ago lived on a farm at Saddle River, N. J. She leaves a son and daughter, respectively eighty and seventy-three years old, seven grandchildren and eleven great-grandchildren.

Co-operation in Reduction of Infant Mortality. — Under the general supervision of the Brooklyn Children's Aid Society, many of the relief associations of that borough have been organized for co-operative work in the saving of infant mortality, in the manner inaugurated earlier in the season in Manhattan. Owing, no doubt, to the hotter weather, this mortality has been larger in the city this year than last, but the rather unusual fact that the deaths have been proportionately smaller in number in Manhattan, with its more crowded tenement population, than in the other boroughs, may possibly be due to the more prompt inception of systematic relief work in Manhattan.

Death of Dr. William Elmer. — Dr. William Elmer, of Trenton, one of the best-known physicians in New Jersey, died at Atlantic City on July 18. He was born in Bridgeton, N. J., in 1840, and was graduated from the medical department of the University of Pennsylvania. He represented the fifth generation of physicians in the Elmer family, and was the son of the late Dr. William Elmer, for many years the leading physician of Bridgeton, where another son, Dr. Henry Elmer, still practices. Dr. Elmer was an ex-president of the New Jersey State Medical Society and at the time of his death was medical director of the Mercer Hospital in Trenton and a member of the State Tuberculosis Commission.

Liability of Druggists. — The Appellate Division of the New York Supreme Court, in an opinion written by Justice Seabury and concurred in by the other justices, has rendered a decision to the effect that a druggist is liable for any damage incurred in selling a drug for a specified purpose. The particular case at issue was an appeal from a decision by a municipal court justice, awarding $250 damages to one Solomon Goldberg against Hegeman & Co., for injuries to his body through the application of a certain lotion, the nature of which is not stated. In the course of the opinion it is said: "When the plaintiff asked for a drug for a particular specified purpose, and when the defendant sold him a drug for this purpose, it thereby impliedly represented the drug which it sold to be suitable for the purpose for which it was sold. The plaintiff used it for the purpose for which the defendant had sold it to him, and thereby sustained injury. . . . It is true that in the present case the druggist put no label on the drug, but, in attempting to fill the plaintiff's order, the defendant, by the action of its agent, declared the drug to be fitted for the purpose for which he sold it, just as clearly as if he had labeled it as fit for this purpose." On the face of the matter it would appear that this was a clear case of a druggist's undertaking to prescribe, contrary to the law, but this phase of it was apparently not taken into consideration in the action at issue.

Current Literature.

NEW YORK MEDICAL JOURNAL.

June 13, 1908.

1. Flint, A., Jr. *Hygiene and Management of Pregnancy.*
2. Lilienthal, H. *Suprapubic Prostatectomy in Two Stages,*
3. Gregory, M. S. *Some Present Limitations of Our Conception of Paranoia.*
4. *Goldan, S. O. *Neuralgia Its Specific Treatment with Chloroform Subcutaneously.*
5. McCullagh, S. *The Modified Blood Clot in Mastoid Surgery.*
6. Springer, H. L. *An Analytical Study of Six Hundred Cases of Anesthesia.*
7. Mason, R. D. *Pruritus Ani: Its Cause and Treatment, with Especial Reference to the Use of Roentgen Rays.*
8. Files, C. O. *Pruritus Ani.*

4. Goldan recommends with enthusiasm the subcutaneous use of chloroform in all forms of neuralgia, including lumbago. The procedure is to inject two to five drops of chloroform in five or six sites about one-half to one inch apart in the painful area. The injections are made as a rule both superficially and deep. The author finds that superficial injections often act with certainty, even when the pain seems to be deep-seated. In his opinion chloroform is almost a specific in neuralgia. [R. I. L.]

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

June 13, 1908.

1. Harrington, C. *States' Rights and the National Health.*
2. Herter, C. A. *Indolaceturia.*
3. Bryant, A. G. *Streptococcic Infections of the Pharyngeal Adenoid Tissue in Adults.*
4. Freudenthal, W. *Laryngeal Manifestations in Locomotor Ataxia and Multiple Sclerosis.*
5. *Beer, E. *The Phloridzin Test, with Special Reference to the Influence Exerted by a Diseased Kidney on the Excretory Work of the Second Organ.*
6. Miller, A., and Barber, S. A. *An Epidemic of Cerebrospinal Meningitis. Successful Use of Flexner's Antiserum.*
7. Albee, F. H. *Arthritis Deformans of the Hip. Preliminary Report of a New Operation.*
8. Lewis, F. P. *The Eye as a Contributing Factor in Tuberculosis.*
9. Tice, F. *Ocular Reaction to Tuberculin.*

5. Beer reports 7 selected cases of the use of phloridzin to determine the excretory activity of the kidneys. These cases seem to show that one diseased kidney may so influence the second organ as to cause the latter to appear gravely diseased, according to the phloridzin test. However, such was not the case, and after the removal of the diseased kidney, the apparently inadequate second kidney responded to the functional tests as a normal organ. [R. I. L.]

BULLETIN OF THE JOHNS HOPKINS HOSPITAL.

May, 1908.

1. Robin, A. *John Syng Dorsey: the Secret of His Success.*
2. Parker, E. M., and Kerr, H. H. *Intestinal Anastomosis without Open Incisions by Means of Basting Stitches.*
3. *Strouse, S. *A Clinical Study of the Alkalinity of the Blood.*
4. Calvert, W. J. *Cardiohepatic Angle.*

3. Strouse investigated the alkalinity of the blood in a variety of conditions. His observations did not show any positive correlation to the clinical picture. [R. I. L.]

June, 1908.

1. Chatard, J. A. *Avicenna and Arabian Medicine.*
2. Howard, W. T. *The Kern-Plasma Relation Theory.*
3. Schultz, O. T. *Fritz Schaudinn: a Review of His Work.*
4. Walsh, J. *The Methods of the Henry Phipps Institute for the Study, Treatment and Prevention of Tuberculosis in Philadelphia.*

Journal of Medical Research.

May, 1908.

1. Hawk, P. B. *On the Diuresis Following Ether Narcosis.*
2. *Smirnow, M. R. *New Technic in the Study of Symbiotic Relations of Bacteria.*
3. *Smirnow, M. R. *Some Symbiotic Relations of Bacillus Diphtheriæ.*
4. Rettzer, L. F., and Harvey, S. C. *Fatal Septicemia in Young Chickens, or "White Diarrhea."*
5 Gurd, F. B. *A Contribution to the Bacteriology of the Female Genital Tract with Special Reference to the Detection of the Gonococcus.*
6. *Strong, R. P. *Protective Inoculation against Plague.*
7. *Torrey, J. C. *A Study of Natural and Acquired Immunity of Guinea Pigs to Gonococcus.*
8. McConnell, G. *Sudan Oil in the Transplantation of Tumors.*

2 and 3. Smirnow recommends a technic for making the "osmotic test-tube," and a double celloidin sack with which the symbiotic relations of bacteria can be studied *in vitro* and *in vivo*. He has been experimenting with the B. diphtheriæ and its symbiotic relations with several other organisms. He used two cultures closely resembling the diplococcus intracellularis meningitidis, and an organism obtained from the discharge of a severe case of rhinitis. He finds that in the presence of these antagonistic bacteria the diphtheria bacilli encounter a strong opposition to growth, the antagonism being due, apparently, to the soluble products of these bacteria. For the two sorts of diplococci the antagonism is most marked when associated with a medium unfavorable for the diphtheria bacilli, and then is best shown by subculturing. The antagonism of the other organism is marked even on the most favorable media for the diphtheria bacilli. All of these three cause clumping of the diphtheria bacilli, and also give rise to coccoid forms. This probable change in morphology is not permanent, as the diphtheria bacilli return to their typical forms under favorable conditions. In experiments with streptococcus he found a marked antagonism to the growth of diphtheria bacilli on blood serum. The antagonism was apparent for the first ten or fifteen hours, but after twenty to thirty hours it disappeared. He believes on this account that the twenty-four-hour bacteriological diagnosis of diphtheria should not positively be relied upon in all cases, but extended at least to thirty-two hours.

6. Strong brings forward a plea for the use of "vaccination" against plague with attenuated living cultures of plague bacillus, for he has found that this method will give a higher immunity than the dead cultures or their extracts. His experiments convince him that under proper controls this method can be used without danger.

7. Torrey reports his work on the immunity of guinea pigs against the gonococcus. With the gonotoxin derived from the bodies of dead and disintegrated gonococci no immunity could be obtained. A certain degree of specific immunity to emulsions of living gonococci may be induced, however, by vaccination of the same. Animals immunized by living vaccines were immunized earlier in the course of treatment, and more completely in the end, than when heated vaccines were employed. An animal receiving six weekly injections of $\frac{1}{12}$ the fatal dose was protected against the dose fatal for normal pigs. In a series of guinea pigs immunized in this way, gonococci absorbed from the peritoneal cavity were rapidly destroyed in the blood. The heart's blood was practically sterile in thirty minutes, after intraperitoneal inoculation. This rapid destruction was, in all probability, due to specific immune bactericidal bodies. A Pfeiffer reaction of varying intensity occurred in the peritoneal fluid of these immunized animals. By injecting a number of guinea pigs with living cultures, and then killing them at stated intervals, he was able to observe all the stages in the reaction of the animal against the gonococcus. He found that the absorption from the peritoneal surface after intraperitoneal injections of living gonococci was very rapid. In five minutes an average of 50 organisms were found in one loop-full of heart's blood. The maximum number appeared in two hours, about 500 to a loop-full. After ten hours, in those animals which are recovering, the blood is practically sterile. He found that phagocytosis plays little part in the destruction of the gonococcus. The degree of phagocytosis is apparently the same whether the animal dies or recovers. The guinea pigs recover because the body fluids contain sufficient alexin to cause the destruction of the gonococci. An infection with the gonococcus does not take place in guinea pigs, but they die because of the establishment of a toxemia. [W. B. R.]

Annals of Surgery.

July, 1908.

1. *Binnie, J. F. *Aneurysmorrhaphy.*
2. *Abbe, R. *Aneurysmorrhaphy.*
3. *Blake, J. A. *Aneurysmorrhaphy.*
4. *Morris, R. T. *The Serous Coat of Blood Vessels Compared with the Peritoneum.*
5. *Gillette, W. J. *Ligation of the Left Common Iliac Artery.*
6. *Hartwell, J. A. *The Question of Operation for Non-Penetrating Intracranial Trauma.*
7. *Johnston, G. B. *Splenectomy.*
8. *Ross, G. G. *Subcutaneous Rupture of the Spleen.*
9. Lobingier, A. S. *Gangrene of the Gall Bladder.*
10. *Willis, M. *The Treatment of the Appendix Stump after Appendectomy.*
11. Blake, J. A. *Excision of Carcinoma of the Rectum by the Combined Method.*
12. Armstrong, G. E. *The Diagnosis and Prognosis of Tuberculous and Septic Conditions of the Kidney.*
13. *Mayo, C. H. *Transperitoneal Removal of Tumors of the Bladder.*
14. *Babler, E. A. *Ainhum.*
15. Waechter, A. *Arrest of Growth at the Lower End of the Radius after Separation of Its Epiphysis.*
16. *Lange, S. *Strain-Fractures of the Knee.*

1, 2 and 3. The surgical treatment of aneurysm has made radical progress from the digital compression of fifty years ago through antiseptic ligation wiring and electrolysis to the modern method of endo-aneurysmorrhaphy. Abbe describes the history of this progress and reports 2 cases successfully treated by the Matas operation. He believes this method may be applied to aneurysm of any artery up to the innominate; and for aneurysm of the abdominal aorta suggests tight suture of the sac around a glass tube inserted into its lumen, collateral circulation being established by the time the irritation of the tube causes occlusion. The possibility of this procedure in the cat he has proved by experiment. Binnie reports 2 cases of popliteal aneurysm treated by obliterative operation, and a third in which the reconstructive method was attempted but amputation made necessary by secondary hemorrhage. He discusses and illustrates the types and manner of formation of aneurysm. Blake believes the obliterative preferable for popliteal aneurysm to the reconstructive form of operation, which aims not only to remove the aneurysm but to restore and preserve intact the function of the vessel.

4. From the histologic and pathologic analogy of tunica intima and peritoneum, Morris emphasizes the importance in vascular surgery of avoiding injury to the intima where preservation of patency is desired, and of reinforcing by suture of the outer coats any little depression of the serous layer at which aneurysm is liable subsequently to develop.

5. Gillette reports a case of ligation of the left common iliac artery for traumatic gluteal aneurysm, followed by gangrene of the leg, amputation of the thigh, and recovery. He collects from the literature 79 other cases of ligation of the common iliac, which, with his own, show a gross death-rate of 70%. Of the cases occurring since the introduction of asepsis, the mortality has dropped to 47⅔%, and gangrene has taken place in 33⅓%. The operation is still one of great risk, and the likelihood of gangrene seems unavoidable.

6. Hartwell reports 7 cases illustrating the various types of non-penetrating intracranial trauma, particularly the border-line forms in which the advisability and value of operation are matter of serious question. He concludes that in such cases operation without definite diagnosis does harm oftener than good, but that decompression is indicated to relieve pressure due to inaccessible hemorrhage or to traumatic cerebral edema.

7. Johnston presents a statistical summary of 708

splenectomies reported up to 1908, showing a gross mortality of 27½%, which has fallen to 18½% in the cases since 1900. He discusses the various indications for splenectomy, which he believes is never justifiable in leukemia.

8. Ross reports 2 cases of subcutaneous rupture of the spleen and collects several others from recent literature. He points out that a physiologically or pathologically enlarged spleen is more friable and subject to rupture from minor injury than is a spleen of normal size.

10. Willis presents an interesting and valuable tabulation of the various methods of treating the appendix stump employed by 105 representative American surgeons. Of these, 73% always bury the stump and 10% leave it unburied only in drained cases. Only two operators report untoward results from a buried stump, whereas 23 note the frequency of slipped ligature, peritonitis, adhesions, and ileus when it is unburied. The conclusion seems emphatically in favor of ligation and burying except, perhaps, in the most acute cases with perforation or abscess.

13. Mayo advocates the transperitoneal route for removal of benign and malignant tumors of the bladder, believing that the slightly increased risk of peritoneal infection is overbalanced by the great advantages of accessibility and complete removal of the growth.

14. Ainhum is a rare disease, of unknown etiology, perhaps a trophoneurosis, almost entirely confined to negroes, characterized by sclerosis and spontaneous amputation of the fingers and toes. It begins at the base of the digit as a nodule from which proceeds an encircling fissure that slowly deepens and may require ten years to produce amputation. Ulceration, bleeding and discomfort are seldom present. In this respect and in manner of onset it differs entirely from Reynaud's disease. Babler reports a case of ainhum, the twenty-fifth that has been noted in the United States.

16. Lange describes a series of rare strain-fractures about the knee-joint, caused by indirect violence producing undue tension on the several ligaments of the joint. The principal forms are avulsion of the external and internal tuberosities of the tibia, and avulsion of fragments of bone at the points of attachment of the crucial ligaments. Diagnosis can be made only by means of the x-ray, which he believes should always be taken in cases of injury about the knee-joint. [R. M. G.]

Münchener Medizinische Wochenschrift. No. 18.
May 5, 1908.

1. Sellheim, H. *The "Eye of the Obstetrician."*
2. Merkel, H. *Hints on the Technic of the Uhlenhuth Method of Blood Examination.*
3. Schott. *Acute Heart Strain.*
4. Hertz, R. *The Proteolytic Action of Sterile Pus.*
5. Schottelius, A. *Diabetes Mellitus as an Indication for Interrupting Pregnancy.*
6. Reichmann. *Etiology, Anatomy and Diagnosis of Acute Atrophy of the Liver.*
7. Koch, W. *The Origin and Treatment of Herniæ.*
8. Zinsser, F. *The Treatment of Venereal Ulcers with Hot Irrigations.*
9. Piltz. *Lysol Poisoning Following Uterine Douching.*
10. Weisswange, F. *Abscess of the Kidney Following Gonorrhea; Operation, Recovery.*
11. *Witthauer, K. *Gelatin and Salt Solution Infusions in Typhoid Hemorrhage.*
12. Kretschmar. *A Practical Instrument for Furthering Physical Examination.*
13. Frankenburger, A. *Sanatorium Treatment and its Indications.* (Concluded.)
14. Moro, E., and Mandelbaum, M. *New Methods in Treating Purulent Processes.*

11. Witthauer reports 4 typhoid cases with severe hemorrhage from the bowel, treated with subcutaneous injections of sterile gelatin. Three out of the 4 recovered, and in the fourth, the hemorrhage stopped three days before death. The preparation used was that of Merck, 50 gm. per dose, either daily or every other day till the bleeding stopped and remained absent. In conjunction with this, the author used salt solution infusions during the height of the bleeding. He had previously used gelatin by mouth and rectum without success, but he believes the subcutaneous use of gelatin in typhoid to be of much value, and hopes that further observations on the subject will be instituted. [R. D.]

Berliner Klinische Wochenschrift. No. 18.
May 4, 1908.

1. De Renzi, E. *Stokes-Adams Disease.*
2. *Hampeln, P. *Sternal Pain.*
3. Lipschütz. *Idiopathic Osteopsathyrosis.*
4. Veil, W. *Prostatic Sarcoma.* (Continued article.)
5. Fornet, W., and Schereschewsky, J. *The Specificity of the Serum Reaction in Lues and General Paralysis.*
6. Cohen, C. *The Sero-diagnosis of Syphilis in Ophthalmology.*
7. *Fischel, W. *The Hemolytic Reaction of Blood Serum in Malignant Tumors.*
8. Rothschild, J. *Experiments with the Guaiac Blood Test.*
9. Rosenbach, F. *The Conjunctival Reaction in Tuberculosis.*
10. Tugendreich, G. *The Recognition of Acidosis in Infants.*
11. Wasserthal. *The Value of Mollière's Methyl Violet Reaction in Testing for free HCl.*
12. Lebram, P. *New "Telephone Ear Trumpets."*

2. Hampeln finds that severe pain referred to the sternum may often simulate the pain of angina pectoris closely, coming on as it does after exertion, and being at times severe enough to cause cessation of motion. The author believes this pain to be analogous to intercostal neuralgia. In these cases there is frequently a point tender on pressure over the sternum, which is probably due to often repeated slight traumata, or to continuous muscle pull. These pains must be put in the neuralgic class.

7. Fischel has made 17 observations on the blood serum reaction in malignant tumors. He finds that the blood serum of many patients with malignant disease shows a hemolytic action with the blood corpuscles of different animals. The hemolytic reaction is not specific for one kind of animal, as Kelling holds, neither is it specific for malignant tumors, as the author has found the reaction present in blood taken from patients with pernicious anemia and tuberculosis, in whom no evidence of malignant disease was present. [R. D.]

Deutsches Archiv für Klinische Medizin. 1908.
Band 93. Heft 1 and 2.

1. *Aufrecht. *The Genesis of Arteriosclerosis.*
2. *Riebold. *Periodic Fever with Rheumatic Appearances in Young Girls (Recurrent Rheumatoid Ovulation Fever).*
3. *Haeberlin. *The Occurrence of Precapillary Venous Varices on the Anterior and Lateral Thoracic Wall in Diseases of the Circulatory and Respiratory Organs.*
4. Hasselbalch. *The Effect of Temperature on the Vital Mean Position of the Lungs.*
5. Hasselbalch. *The Total Capacity of the Lungs.*
6. *Dietschy and Hossli. *The Determination of Circulatory Relations by Means of Blood Pressure Estimations.*
7. *Groedel, T., and Groedel, F. *The Form of a Cardiac Silhouette in Different Valvular Lesions.*
8. Arnsperger. *Eventration of the Diaphragm.*
9. *Fischer. *The Gastric Contents in Cancer.*
10. Stäubli. *A Contribution to the [Pathology and Therapy of Diabetes Mellitus.*
11. *Grafe and Röhmer. *The Presence of Hemolytic Substances in the Gastric Contents and Their Importance in the Diagnosis of Gastric Cancer.*
12. *Weil. *The Hereditary Form of Diabetes Insipidus.*
13. Plesch. *Some Remarks on Percussion.*

1. In a study of 22 aortæ with sclerotic changes Aufrecht concludes that the changes in the intima and media represent nutritive disturbances degenerative in character and not an inflammatory process. In the adventitia, however, the process is very different and is inflammatory in character. There are hyperemic blood vessels and granulation tissue. Associated with this change in the adventitia are changes in the blood vessels of the aorta

(vasa vasorum) which result in a narrowing of their lumen and a consequent decrease in the blood supply of the media and intima. The changes in the intima and media have no causal relation to each other and are both dependent upon the changes in the adventitia. Changes in the media, however, are apt to precede those in the intima since the intima is not so dependent upon the vasa vasorum for its blood supply, and the smooth muscle of the media degenerates sooner than the more resistant connective tissue of the intima. The entire process Aufrecht prefers to call an arteritis in the same sense that certain chronic changes in the kidney are called nephritis.

2. Riebold describes at length a symptom-complex which occurs for the most part in young girls, and which consists of the periodic occurrence of fever associated with rheumatic disturbances in the joints, and not infrequently circulatory disturbances and a variety of inconstant symptoms referable to various organs. That fever associated with menstruation is not uncommon has for a long time been known, but in most of these cases there is some slight focus of infection insufficient to produce fever except during the menstrual period. In these cases of Riebold, however, there is no evidence of such a focus. The attack usually precedes the menstrual flow, and commonly these girls have more or less periodic attacks between the menstrual periods. This periodicity Riebold associates with ovulation, which may take place periodically without being followed each time by a menstrual flow. Treatment of the condition is purely symptomatic. Salicylates have almost no effect.

3. Small groups of dilated venules just above the costal margin are frequently seen, especially in patients suffering from circulatory or respiratory disturbances. Haeberlin has studied these in a group of cases and considers them to be the result of passive congestion. They may be caused by an hypertrophied left ventricle compressing the venous channels against the thoracic wall. A generally weak circulation, particularly with weakness of the right heart, may lead to the same condition. Much more commonly along with the weakened circulation certain mechanical factors contribute largely to the condition. These occur during the thoracic excursion of abdominal respiration. The subcutaneous venules running up over the costal margins are compressed at the time of the excursion of the lower ribs with inspiration. This excursion is more marked in an abdominal type of breathing and it is frequently associated with respiratory and circulatory disturbances which cause an increased abdominal respiration. As an abdominal type of respiration is more common in men than in women, so these dilated venules are more frequent in men. They are not diagnostic of any particular condition, but rather of general conditions leading to the above described changes in respiration.

6. These authors have made careful blood pressure studies in certain acute infectious diseases like typhoid, pneumonia and staphylococcus septicemia. Their results indicate that not a weakness of the vasomotors but a weakness of the heart is primarily the cause of a dangerous condition in these diseases.

7. T. and F. Groedel have studied a number of cases of valvular disease of the heart by means of the orthodiagraph, and in outlines of the heart thus obtained they find important evidence in aid of the correct diagnosis of lesions of various valves, singly or in combination. They regard this as an important aid to the other methods in making a correct diagnosis. Their conclusions, however, may be criticised on the basis that their diagnoses have not been subjected to the control of post-mortem proof.

9. A large per cent of cases of cancer of the stomach show a decreased amount of free hydrochloric acid in the stomach contents. The reason for this has been a matter of considerable discussion. The total acidity is usually not decreased or only moderately decreased. If the free hydrochloric acid were neutralized by alkalies, the reaction of the stomach contents would be neutral and this is usually not the case. Analysis shows that the total chlorides of the stomach contents is not decreased in cancer. It had been suggested that certain end products of proteolytic digestion were formed in the stomach and these unite with the free hydrochloric acid to form acid-reacting products. Fischer has been able to collect large amounts of gastric contents from cases with cancer, and he has submitted these to a careful chemical study with particular reference to the presence of end products of the hydrolytic cleavage of proteids. He has been able to demonstrate the presence of such amino acids as tyrosin, leucin, arginin and lysin. These probably are formed from the action of a proteolytic ferment in the cancerous stomach. These substances are capable of uniting with free hydrochloric acid, and when present in considerable amount may take up all of the free hydrochloric acid and still leave bonds free to unite with more hydrochloric acid when it is added artificially to the stomach contents. At the same time combinations so formed with hydrochloric acid remain acid in reaction to litmus.

11. Grafe and Röhmer have been able to isolate from the fasting stomach contents in cases of cancer of the stomach a hemolytic substance. This is obtained by rendering the stomach contents alkaline and shaking for twelve hours with ether. The ether is removed by evaporation and an emulsion made with the residue, and tested as to its hemolytic properties on red blood corpuscles in the usual way. In this manner they have studied 127 cases and obtained a positive hemolysis in all of 19 cases proven to be cancer by operation or autopsy, in all of 17 cases with definite clinical evidence of cancer, and in 14 of 16 cases believed to be cancer but not definitely proven. There was no hemolysis in 20 healthy individuals, none in 24 cases of ulcer of the stomach and none in 31 cases showing a variety of gastric symptoms but not cases of cancer. This hemolytic substance is a lipoid, probably oleic acid, derived from the cancerous ulcerated stomach wall. In only one case surely not cancer did they get a positive hemolytic test, and the reaction in this case was so different from the others that it was believed to be dependent upon some different cause than that active in the other cases, and from the nature of the reaction it was easily distinguishable from the others, so that this would not cause confusion even had it occurred more frequently.

12. Weil gives a further description of a family reported at an earlier date by his father in which diabetes insipidus appears to be an hereditary condition. Up to the present time 35 cases have occurred in five generations composing now a total of 220 individuals. This hereditary form of the disease is characterized by a very large output of urine at a single urination, very low specific gravity and the fact that these individuals are little disturbed by the disease, and apparently beyond the excessive intake of water and the large output of urine lead perfectly normal lives. In these cases the specific gravity of the urine is very low, but they have not lost the power of secreting a more concentrated urine and can excrete quite promptly excesses of sodium chloride in their diet. However, it is probable that they have a relatively decreased ability to excrete a concentrated urine.

[H. A. C.]

Archiv für Klinische Chirurgie.

Band 84. Heft 2.

1. Jacobsthal, H. *The Histology of Epithelioma of the Skin Undergoing Spontaneous Healing.*
2. *Anschütz, W. *Further Contributions to Resection of the Liver.*
3. *Hashimoto, T., and Tokuoka, H. *The Treatment of Gunshot Injuries of Peripheral Nerves by Tubulization.*
4. *Karewski. *The Surgical Treatment of Actinomycosis of the Lungs.*
5. Bibergeil, E. *A Report of Three Hundred and Fifty-three Cases of Complicated Fractures.*
6. Schloffer, H. *A Case of Gradual Occurrence of Central Dislocation of the Femur.*
7. Wrede, L. *The Stasis Treatment of Acute Suppuration.* (Continued article.)
8. Krause, F. *On Paralysis Due to Lesions of the Spinal Cord.*
9. Bogoljuboff, W. L. *Experimental Ligation of the Intestine.*

2. Anschütz feels that in the future more resections of the liver will be followed by closure of the abdomen than has been the case in the past. This is made possible by the accurate ligation of all vessels and close approximation

of the cut surfaces. In doubtful cases the wound of the liver should be covered by a piece of omentum. The dome of the liver is best exposed by an osteoplastic resection of the right costal arch, according to the method of Willy Meyer. The transpleural route is to be condemned. Reliance on artificial appliances, such as ivory plates, etc., is bad practice, because unnecessary. A blunt-pointed needle is of value, however.

3. The authors report their results in fifty cases of injury to the peripheral nerves which occurred in the late Russo-Japanese war. The most constant symptom of nerve injury they find to be neuralgia. This occurs either immediately or a short time after the injury, and can be much lessened by warm moist dressings. Without these, however, it can reach a degree of severity which is unbearable. Motor involvement shows itself by immediate paralyses; sensory involvement usually as hyperesthesia. Trophic disturbances are frequent, coming on days or weeks after the injury. In 50 operations, only 7 cases were seen in which the continuity of the nerve was completely severed. The injured nerve appeared thickened and sclerosed, and imbedded in scar tissue or callus. The portions of the nerve distal and proximal to this were flattened, thin and hyperemic over an extent of 3 to 5 cm. In severe cases the peripheral portion of the nerve was so thinned that it was followed with difficulty. The operative treatment consisted in dislocation of the nerve into a smooth fascial plane (neurolysis), with or without stretching, in cases where the continuity was not lost. In other cases nerve suture was done with fine catgut, followed by the tubulization of the nerve inside the hardened artery of a calf. The preparation of these arteries is as follows: After removal from recently killed animals, the vessel is stretched over a glass rod and hardened in a 5% to 10% solution of formalin for forty-eight hours. After washing twenty-nine hours in running water, the vessel is boiled for twenty minutes and then preserved in 95% alcohol. Of 43 cases of neurolysis the result in 28 was satisfactory, as also in 3 cases out of 4 nerve sutures. In 3 cases of nerve grafting the result was not good. It is important that the cases should receive treatment as soon as possible after the gun-shot injury has healed; at the latest, within one hundred days of this time.

4. Karewski concludes as follows: (1) Primary actinomycosis of the lungs is more common than has been thought heretofore, because it is often confused with fibroid phthisis. (2) The diagnosis, difficult in the beginning, and simulating chronic tuberculosis, is based on the bacteriological examination of the sputum, and on the x-ray. (3) A slowly growing swelling on the thorax, especially on its posterior aspect, makes one suspicious of actinomycosis, when signs of bronchitis have preceded it and neither tubercle bacilli nor elastic fibers can be found in the sputum. (4) Pulmonary actinomycosis in its early stages, before metastases have taken place, can be cured by operation. (5) Every swelling on the thorax should be opened early, and followed to its source. (6) An operation which removes all ramifications of the process, whatever the cost to the healthy tissues, gives the best results. [W. C. Q.]

Revue de Chirurgie.

June, 1908.

1. Berger, P. *Epithelioma of the Heel, Developing around a Sequestrum Resulting from an Old Osteomyelitis of the Calcaneum: Wladimiroff-Mikulicz Operation.*
2. Quénu, E., and Duval, P. *Operative Technic of Complete Colpo-Hysterectomy by Combined Perineal and Abdominal Route.*
3. *Cavaillon, P., and Perrin, E. *Colectomy in Cancers of the Large Intestine.* (Continued article.)
4. *Fabre, J., and Thévenot, L. *Goiter in the New-Born.*
5. Hardouin, P., and Marquis. *Retro-Mammary Thoracic Cold Abscesses.*
6. Quénu, E. *Typhoid Cholecystitis during the Course and Convalescence of Typhoid Fever, Especially Its Operative Treatment.*

3. The authors strongly advocate attempted radical cure of cancer of the large intestine by early colectomy, in preference to palliative operation of any kind, except in advanced cases, and collect a series of statistics which they regard as showing good remote results of this procedure but a relatively high operative mortality (33% to 70 %) attributed by them largely to complications. They describe two clinical types of cancer of the colon, and report several cases.

4. Goiter is so common in the adult or adolescent that there is a tendency to forget its occurrence in the new-born. The writers collect from the literature over 130 cases of congenital goiter, representing five pathologic types, — simple diffuse parenchymatous hypertrophy, telangiectatic goiter, fibrous goiter, adenoma, and thyroid cyst. Of these, the first two are by far the most frequent. The signs and clinical forms do not differ materially from those of similar benign diseases of later age, except that suffocative symptoms are more prominent. There is often also associated hypertrophy of the thymus. The treatment of the milder cases is medical; that of the severer grades, which menace life by interference with respiration, is surgical, by isthmectomy, exothyropexy, intraglandular enucleation, or strumectomy. The relative indications for these four recognized operations depend on particular conditions in each case. Tracheotomy is seldom advisable or necessary. Prophylaxis may begin by medical treatment of a goitrous mother during pregnancy.

6. Probably the gall bladder very commonly shares in the general infection of typhoid fever. Usually the biliary infection remains latent, but sometimes it produces during the course or convalescence of the disease a typical cholecystitis. Quénu collects 45 such cases operated with a mortality of about 22%. [R. M. G.]

◆

Miscellany.

REVISION OF INTERNATIONAL CLASSIFICATION OF CAUSES OF DEATH.

Dr. Cressy L. Wilbur, chief statistician under the Bureau of the Census, Department of Commerce and Labor, makes the following statement:

The International Classification of Causes of Death, which is intended for the purposes of morbidity and hospital returns as well as for mortality statistics, will be subjected to its second decennial revision next year. This system, formerly known as the "Bertillon system," was recommended by a committee of the International Statistical Institute during its session at Chicago in 1893. It was urgently recommended for adoption by the American Public Health Association, representing the sanitary authorities of Canada, Mexico and the United States, in 1898. In the first revision, held at Paris in August, 1900, representatives of twenty-six countries participated. It is employed by the United States Bureau of the Census, by all registration states, and by nearly all registration cities in the United States. Every country in North and South America has adopted it, and it is used by Japan, and by France, Spain, Holland, Belgium, Greece, Bulgaria and other European countries. It has also recently been adopted, after careful comparison with the system formerly in use, by the Bureau of Census and Statistics of the new Commonwealth of Australia.

At the recent meeting of the American Medical Association at Chicago, the House of Delegates unanimously resolved "That the International Classification of Diseases and Causes of Death be recommended for all official morbidity and mortality statistical reports." A special committee, whose chairman is Dr. Frank P. Foster, of New York, is preparing recommendations for submission to the International Commission of Revision, and committees have been appointed by the various sections of the association and by national organizations, such as the American Academy of Medicine, the American Medico-Psychological Association, and others, to co-operate with the association's committee. The subject of classification will be made a special topic at the approaching session of the Section on Vital Statistics of the American Public Health Association to be held at Winnipeg, Manitoba, Aug. 25–28, 1908.

It was proposed in the resolutions adopted by the American Medical Association at Chicago, that inquiry be made as to the possibility of holding the meeting for revision at Washington in 1910, in connection with the International Congress of Hygiene and Demography; but the preliminary announcement just issued by Dr. Bertillon, at the request of the Ministry of Foreign Affairs of the French Government, indicates that the year 1909 has been chosen, largely to facilitate the use of the revised classification in connection with the mortality statistics of the census year 1910 in the United States. This action should be greatly appreciated, and all registration officials, health officers, hospital physicians, and the profession generally should co-operate so that the results of the revision will be thoroughly satisfactory for use in this country during the next ten years. Many suggestions from American physicians were incorporated in the first revision, but the progress of medical science and the test of practical use will indicate changes that are desirable. The system may be examined in the annual reports on Mortality Statistics, published by the Bureau of the Census, as well as in the registration reports of many states and cities. Copy of a pamphlet on "Relation of Physicians to Mortality Statistics," containing an outline of the classification, will be sent by the Director of the Census to any physician upon request, and I shall be pleased to receive any suggestions for the revision of the classification, which I will submit to the co-operating committee and to the International Commission.

Correspondence.

LONDON LETTER.

[*From our Special Correspondent.*]

SOME HEALTH RESORTS IN THE AUSTRIAN TYROL. ETHNOLOGY IN VIENNA. LONDON'S CORONER GRIEVANCE. THE DARWIN-WALLACE CELEBRATIONS. THE "DAYLIGHT SAVING BILL."

LONDON, July 10, 1908.

Mr. Editor: Londoners have been enjoying a few weeks of almost uninterrupted sunshine; a great many of our French visitors will go back to France disabused of their prevailing notions as to the Land of Fogs. Your correspondent, however, has been seeing what other lands can do in the way of sunshine. June in the Austrian Tyrol is a delight to the healthy, rest for the weary, rejuvenation to those who feel the years creeping on, and it may be health to the sick. The scenery is magnificent at all times; in winter there is sport for all, and mountain air of the best for all those who habitually or perforce resort to, shall we say, Davos? but would do better to seek pastures new. Innsbruck, Igls, Stubai-Fulpmes, Kitzbühel and that delightful little spot, Klobenstein above Bozen, are all centers for "winter sport," and all have every facility and convenience for patients. At this time of year, however, the snow is in retirement and the season is for "baths," — air-baths and sun-baths, like those at Mendel and Penegal on the top of the Mendel Pass; radio-active waters like those of Gastein, and medicated baths like those of Roncegno and Levico. Levico has been celebrated for many years for its arsenical waters, and is a very favorite resort of Italians. Roncegno, which is within driving distance of Levico, — might be called "the German Levico," in fact, — claims for its waters that they are less impregnated with copper than those of Levico (the Levico waters stain the skin) and are more highly radio-active even than those of Gastein. Be that as it may, there is no doubt that the situation, the climate and the accommodation are all admirable; the Hotel des Bains, like those at Mendel, Penegal and Levico, is most lavishly fitted as regards the bathing facilities, and has also an elaborate installation for all kinds of electrical and gymnastic treatment. Their season is from May to October. The combination of iron and arsenic naturally suggests that the anemias and skin complaints will benefit chiefly, but many forms of chronic joint disease also find great relief. Racial feeling runs very high in those parts of the Tyrol that border Italian territory, and the inhabitants speak Italian to the exclusion of German; hence the rivalry between Roncegno and Levico is apt to be a little acute; the latter is the older and better known establishment, but there is much to be said for the situation of the former.

In Vienna, instead of making pilgrimages to the hospitals, as in duty bound, one's attention was distracted to the study in ethnology afforded by the concourse of peasants from the fourteen provinces of the Austrian Empire assembled for the festival of homage to the Emperor on the completion of the sixtieth year of his reign. The pageant was arranged to illustrate not only the great diversities of dress among the different peoples but even their habits and customs, and a very picturesque display they made.

On returning to London, it was to find the medical world agog over an old grievance, viz., the interpretation put upon the Act defining his duties, by the Coroner for the city of Westminster. A barrister, without special medical training or knowledge, he took leave to act upon the assumption that the fact of an operation having been performed just before death constituted a valid reason for holding a public inquiry at which the propriety of performing the operation and the efficiency with which it was carried out should be submitted to the judgment of a jury of laymen directed by a lawyer. It happened that in one case of this kind, he came up against Sir Victor Horsley, and the collision of opinion was bruited so far abroad that even the solemn *Times* was induced to speak. Jupiter Tonans of Printing House Square, quoting, "'But is this law?' 'Ay, marry is't; crowner's-quest law';" pointed out what a slur was cast upon the whole medical profession by the ridiculous contention that the right of "the people" to know the full cause of death after operation could only be maintained by allowing the coroner and his jury to sit in judgment on the surgeon, or that the coroner was a suitable person to control the power possessed by doctors of dealing with other people's lives by means of operations. In law "a death from disease under treatment *secundum artem*, is not *contra naturam*," but the tenure of office of a coroner in this country is so inviolate that he may twist the meaning of the law almost to breaking point without committing such a degree of misconduct as warrants the Lord Chancellor in removing him. An important aspect of the case for operating surgeons in London appears when it is realized that at every emergency operation, added to the already grave responsibilities towards patient and relatives, the surgeon must remember that failure, however forlorn of hope, will result in his having to defend his reputation publicly before incompetent judges. The young surgeon must then build up his reputation in the face of pressadvertisement of his failures, while nothing is heard of his successes.

The Darwin-Wallace celebrations, arranged by the Linnæan Society to commemorate the reading before it of the first paper on natural selection by Darwin and Wallace on July 1, 1858, were the occasion of a very interesting gathering. Not only was the veteran botanist, Sir Joseph Hooker, now ninety-two years of age, able to relate the circumstances which led to a joint production, although Darwin's share had been subjected to the critical test of twenty years' observations whilst Wallace's was fresh from the pen that recorded a "sudden flash of insight," but in addition, Dr. Alfred Russell Wallace himself was there to reiterate his renunciation of any claim to priority, and to recall the generosity with which Darwin was prepared to forego his own claims. In an interesting paragraph he pointed out that "both Darwin and he, at the critical moment when their minds were stored with a considerable body of personal observation and reflection bearing on the problem to be solved, had their attention directed to the system of 'positive checks' as propounded by Malthus in his 'Principles of Population.' The effect of this led them immediately to the simple but universal law of the 'survival of the fittest' as the long-sought effective cause of the continuous modification and adaptation of living things."

The meeting was attended by official representatives of many universities and learned societies, and special commemorative medals were presented to Dr. Wallace, Sir J. Hooker, Professor Haeckel, Professor Weismann, Professor Strasburger, Dr. Francis Galton and Sir E. Ray Lankester.

A "Daylight Saving Bill" has been promoted in Parliament and has been reported upon favorably by a select committee of the House of Commons; its objects are to utilize the early hours of daylight in the summer for business purposes so freeing more of the evening light for recreation, and incidently to lessen the use of licensed houses, so benefiting the physique, general health and welfare of all classes of the community. The state is to benefit by the facilities it will afford for training the territorial army, and the commercial world by the reduction of expenditure on artificial light. There has been a great deal of conflicting evidence as to the best way of moving the usual hours of work and leisure nearer to sunrise, but the final recommendation is to alter standard time by putting all clocks, except those used for such scientific purposes as astronomy and navigation, forward one hour on the third Sunday in April, and back one hour on the third Sunday in September. The expedient sounds simple, and if it were to prove effective there seems reason to hope the benefit to the health of the community would be not inconsiderable, but it seems too much to expect that the habits of a nation will really be altered by even the best-intentioned legislation.

In my next letter I hope to give you some account of the sections of the Franco-British Exhibition that are of interest to medical men. C.

MEMBRANOUS SORE THROAT AND THE USE OF ANTITOXIN.

Westport, N. Y., July 18, 1908.

Mr. Editor: After many years of varied and large experience, I am still much puzzled and extremely anxious about how to diagnose and treat many cases of acute sore throat with a membrane, or with so-called follicular deposits. Formerly when I saw the follicular deposit my mind was greatly relieved, because while I knew such cases often gave considerable fever and other marked general symptoms for several days, I did not believe they could transmit diphtheria.

I now believe they may and do, although infrequently. Formerly a continuous patch of membrane, beginning as a patch and not follicular, was regarded by me as diphtheria. I now know that it may or may not be so. It may extend and involve the uvula and pillars of the fauces and still not be diphtheria, either bacteriologically or symptomatically, in some respects. Again, the laboratory may veto diphtheria, but clinically the practitioner is sure it is diphtheria and of a virulent type also.

Laboratory reports are often unsatisfactory; sometimes they tell us too late the nature of the case for most effective use of antitoxin if the case later be proven to be one of diphtheria. Again, they never do affirm diphtheria, although clinically it is and antitoxin alone seems really preservative of life. In other instances, in which clinically the case is one of diphtheria, although not so declared by the Health Board, the antitoxin is seemingly at first useful, but later we may have very reasonable doubts as to its utility in view of the march of the disease and the symptoms developed. Indeed, the aspect of the throat itself subsequently differs very little, if at all, from what it is at the time the injection is made.

While I have had anxious hours awaiting a doubtful or negative report from the Health Board, I have also had great anxiety for a time, in view of the positive declaration from the Health Board that the case is one of diphtheria and the Löffler bacillus has been discovered. And yet a second examination made within twenty-four hours may declare the patient not affected with diphtheria.

Now, supposing every one notified and protected as far as may be in view of the first diagnosis, how much worry, trouble, anxiety, fear, is occasioned by a false diagnosis. Again, I have known diphtheria to be affirmed and reaffirmed by laboratory examinations, and yet at no time was the child very appreciably ill, and what mild symptoms existed for a day or two rapidly disappeared, and other children in the family, having had no protective serum administered, were soon allowed to be together and no other cases occurred.

In view of what precedes, I have thought, and stated at one time, not long ago, that whenever a case of *membranous sore throat* clinically seemed to be diphtheria, antitoxin should be injected. I now feel somewhat differently, and would only give antitoxin in instances in which the patient was rapidly losing ground, was profoundly poisoned and the membrane extending rapidly. This action is based upon my belief at the present time that nature copes with very many cases of membranous sore throat with or without Löffler bacillus, so called, more successfully and with less risk of doing harm than when we make too rapid use of antitoxin.

I use the term "so-called Löffler bacillus" because it is certain that the degree of virulence of these bacilli varies immensely, and either error arises as to their identity, as I and others believe it often does, or else the true noxa, the virulent poison of diphtheria, or poison of other diseases associated with it and with other germs, should be gauged and treated solely in view of clinical symptoms in very many cases, and especially of those among adults. The reason of this latter statement is because adults as a rule can be more easily isolated than children and because the type of their disease is usually less virulent; and in any event, nature combats it as a rule more successfully.

Truly yours,
Beverley Robinson, M.D.

THE INTERNATIONAL CONGRESS ON TUBERCULOSIS.

Office of Massachusetts State Committee, 309 Ford Building, 15 Ashburton Place.

Boston, July 14, 1908.

Mr. Editor: In order that Massachusetts may be fully represented at the International Congress on Tuberculosis, to be held in Washington from Sept. 21 to Oct. 12, 1908, it is earnestly desired that as many as possible should join the Congress.

The fee is $5.00, which includes all the privileges of the meetings as well as all publications which may appear during the Congress, — reports, memoirs, etc.

Application blanks for membership can be obtained at the above office, or from Dr. David Townsend, chairman of the Publicity Committee, 405 Marlborough Street, Boston.

Very truly yours,
David Townsend, M.D.,
Chairman Publicity Committee.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JULY 11, 1908.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	—	—
Chicago	510	150	Waltham	3	—
Philadelphia	583	231	Pittsfield	—	—
St. Louis	—	—	Gloucester	3	1
Baltimore	271	130	Brookline	5	—
Cleveland	—	—	North Adams	9	1
Buffalo	—	—	Chicopee	7	4
Pittsburg	—	—	Northampton	1	0
Cincinnati	—	—	Medford	5	1
Milwaukee	—	—	Beverly	3	5
Washington	—	—	Leominster	5	1
Providence	73	36	Hyde Park	4	0
Boston	209	74	Melrose	2	1
Worcester	37	17	Newburyport	—	—
Fall River	61	22	Woburn	3	1
Cambridge	19	7	Westfield	3	—
Lowell	45	27	Marlboro	5	0
Lynn	18	5	Revere	4	1
New Bedford	29	20	Attleboro	5	1
Springfield	14	7	Peabody	—	—
Lawrence	24	11	Adams	6	2
Somerville	16	4	Clinton	2	1
Brockton	5	—	Gardner	3	1
Holyoke	18	11	Milford	2	1
Malden	8	4	Watertown	0	—
Chelsea	2	2	Plymouth	—	—
Newton	7	3	Weymouth	4	0
Salem	25	15	Framingham	—	—
Haverhill	—	—	Southbridge	—	—
Fitchburg	8	3	Wakefield	—	—
Everett	4	1	Webster	—	—
Taunton	7	2	Arlington	0	—

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED JULY 8, 1908.

GUITERAS, G. M., surgeon. Detailed to represent the Service at the Fifth Pan-American Medical Congress at Guatemala, Aug. 6–10, 1908. July 6, 1908.

WERTENBAKER, C. P., surgeon. Leave of absence granted Surgeon Wertenbaker for three days from July 1, 1908, amended to read one day. July 8, 1908.

GOLDBERGER, JOSEPH, passed assistant surgeon. Granted leave of absence for one month from July 20, 1908. July 2, 1908.

WARD, W. K., passed assistant surgeon. Granted leave of absence for one day, June 16, 1908. under paragraph 191, Service Regulations.

WARD, W. K., passed assistant surgeon. Relieved from duty at Ellis Island and directed to proceed to Manila, P. I., reporting to the Chief Quarantine Officer for duty. July 7, 1908.

CREEL, R. H., passed assistant surgeon. Granted leave of absence for two months from Aug. 3, 1908. July 1, 1908.

KRULISH, E., assistant surgeon. Granted leave of absence for twenty days from July 6. 1908. July 3, 1908.

HART, L., assistant surgeon. Temporarily relieved from duty at Stapleton, N. Y., and directed to proceed to Washington, D. C., reporting to the Director of the Hygienic Laboratory for temporary duty. July 3, 1908.

WILSON, J. G., acting assistant surgeon. Granted leave of absence for three days from June 16, 1908, under paragraph 210, Service Regulations.

ILTIS, GEORGE W., pharmacist. Granted leave of absence for thirty days from July 3, 1908. July 1. 1908.

KEEN, W. H., pharmacist. Granted leave of absence for one day, June 28, 1908, under paragraph 210, Service Regulations.

APPOINTMENT.

Dr. Henry C. Richter, of Pennsylvania, was on July 7, 1908, appointed an acting assistant surgeon for duty at Calexico, Cal.

BOARDS CONVENED.

Boards of medical officers were convened to meet on July 13, 1908, for the purpose of examining officers of the Revenue-Cutter Service for promotion, as follows:

Baltimore, Md.: Surgeon L. L. Williams, chairman; Passed Assistant Surgeon J. T. Burkhalter, recorder.

New York, N. Y.: Passed Assistant Surgeon J. A. Nydegger, chairman; Passed Assistant Surgeon C. H. Lavinder, recorder.

Boston, Mass.: Surgeon R. M. Woodward, chairman; Acting Assistant Surgeon F. H. Cleaves, recorder.

San Juan, P. R.: Passed Assistant Surgeon M. H. Foster, chairman: Acting Assistant Surgeon P. del Valle Atilles, recorder.

Chicago, Ill.: Surgeon G. B. Young, chairman; Assistant Surgeon C. E. Wood, recorder.

Mobile, Ala.: Surgeon G. M. Guiteras, chairman; Acting Assistant Surgeon C. S. Carter, recorder.

Detroit, Mich.: Surgeon Fairfax Irwin, chairman; Acting Assistant Surgeon E. W. Mooney, recorder.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING JULY 19, 1908.

A. E. LEE, assistant surgeon. Detached from the Naval Hospital, Canacao, P. I., and ordered to the "Concord."

E. O. J. EYTINGE, assistant surgeon. Detached from the "Concord," and ordered to the "Ranger."

C. E. ALEXANDER, pharmacist. Appointed pharmacist from July 10, 1908; ordered to the "Relief."

G. B. H. HARMON, medical director. Detached from the Naval Academy and ordered to temporary duty in command of the Naval Medical School Hospital, Washington, D. C.

W. M. KERR, acting assistant surgeon. Detached from the Naval Hospital, New York, N. Y., and ordered to the Naval Hospital, Norfolk, Va.

J. J. SNYDER, surgeon. Detached from the "New Hampshire," and ordered to the "Franklin."

R. C. RANDALL, assistant surgeon. Detached from the Second Torpedo Flotilla and ordered to the "Solace."

J. A. BIELLO, assistant surgeon. Detached from the "Solace," and ordered to the Pacific Torpedo Fleet.

C. MCLARTY, pharmacist. Placed on the retired list from July 10, 1908, in accordance with Section 1453, Revised Statues.

APPOINTMENTS.

THE following changes have been made in the faculty and curriculum of the College of Medicine, Syracuse University: Frank P. Knowlton, A.M., M.D., Associate Professor of Physiology, has been made Professor of Physiology. H. S. Steensland, B.S., M.D., Associate Professor of Pathology and Bacteriology, has been made Professor of Pathology and Bacteriology. H. D. Senior, M.B., F.R.C.S., Associate Professor of Anatomy, has been made Professor of Anatomy. Ernest N. Pattee, M.S., Professor of Chemistry in the College of Liberal Arts, Syracuse University, has been made a member of the faculty of the College of Medicine. Richard H. Hutchings, M.D., Medical Superintendent St. Lawrence State Hospital, Ogdensburg, N.Y., has been appointed Lecturer on Psychiatry. Ralph R. Fitch, M.D., of Rochester, N. Y., has been appointed Lecturer on Orthopedics. Charles V. Morrill, A.M., recently Assistant in Zoölogy in Columbia University, N. Y., has been appointed Lecturer on Histology and Embryology.

RECENT DEATH.

TRUMAN NICHOLS, of New York, died on July 13, at the age of eighty-one years. He was graduated from Columbia Medical College, and Bellevue Hospital Medical College. For many years he practiced in the lower part of Manhattan, and for the last ten years still retained an office there, though residing in Brooklyn.

BOOKS AND PAMPHLETS RECEIVED.

Medical Gynecology. By Samuel Wyllis Bandler, M.D. Illustrated. Philadelphia and London: W. B. Saunders Co. 1908.

Aids to Osteology. By Philip Turner, B.Sc., M.B., M.S. (Lond.), F.R.C.S. New York: William Wood & Co. 1908.

The Student's Handbook of Gynæcology. By George Ernest Herman, M.B. (Lond.), F.R.C.P., F.R.C.S. Illustrated. New York: William Wood & Co. 1908.

The Sanctity of Medicine. By Thomas F. Harrington, M.D. Reprint.

Medical Inspection in Public Schools. By Thomas F. Harrington, M.D. Reprint.

Surgery. By John Allan Wyeth, M.D., LL.D. (University of Alabama). Illustrated. New York: Marion Sims Wyeth & Co. 1908.

The Natural History of Cancer, with Special Reference to its Causation and Prevention. By W. Roger Williams. Illustrated. New York: William Wood & Co. 1908.

Original Articles.

THE OCCURRENCE OF INFANTILE PARALYSIS IN MASSACHUSETTS IN 1907.*

(WITH ESPECIAL REFERENCE TO ETIOLOGY.)

Reported for the Massachusetts State Board of Health.

BY ROBERT W. LOVETT, M.D., OF BOSTON.

Infantile Paralysis (anterior poliomyelitis) is a fairly common disease, which is followed by serious and most often disabling results in those affected. Its etiology is unsettled, although it is generally considered as infectious in origin; it occurs in epidemics at times and is not free from the suspicion of being contagious. The epidemic of the disease which occurred in New York in the summer of 1907 was by far the most extensive ever reported in any part of the world and left behind it hundreds of children crippled for life. Taking these facts into consideration, it seemed a suitable field of investigation by the Massachusetts State Board of Health in the interest of the public health, especially as it was reported to the board by Dr. James J. Putnam that more cases than usual had been seen in Boston in the year 1907, although there was no evidence of any marked epidemic.

In February, 1908, there were sent out to every physician in Massachusetts (some 6,000 in number) circulars asking them if in the year 1907 they had seen in their practice any cases of acute febrile disturbance followed by paralysis, especially in young children. To the physicians replying in the affirmative, blanks, following somewhat those of the New York committee, were sent to be filled out, one for each case, of which 234 have been received and analyzed. Although, undoubtedly, not all cases occurring in Massachusetts were reported, the data at hand may be taken as representative of conditions in the state, and it is fair to assume that most cases occurring find a place and that the report may be taken as fairly representative of the occurrence of the disease in a state of 3,003,680 inhabitants, living partly in cities and partly in the country.

The present report is to be regarded as a preliminary one, as the board intends to pursue the subject further in the collection and analysis of future cases and in a bacteriological investigation of the disease already started by Dr. Theobald Smith. The present report will deal with the data recorded in literature as to etiology, epidemic character, contagion, and experimental production in animals, and then will be presented an analysis of the cases collected by the board, with especial reference to any light they may throw on the etiology of the affection or its clinical recognition. The group of cases presented differs somewhat from most material already collected, which is largely derived from the observation of late cases seen in hospital clinics, whereas these are acute cases reported by the attending physicians to whom the board desires to express its obligation for their willing and efficient co-operation in the inquiry.

Proceeding first to the analysis of literature, the data are as follows:

Bacteriology. — The evidence in favor of the bacteriological source of the disease is as follows:

Schultz,[1] in 1898, found a diplococcus in a lumbar puncture on the thirteenth day, free in the spinal fluid; leucocytes were not present. A second puncture two days later was sterile.

Dercum,[2] in a lumbar puncture, found a micrococcus which in morphology and staining properties resembled the diplococcus of Sternberg.

Spiller[3] found the staphylococcus pyogenes albus in cultures in the fluid from lumbar puncture in one case affected at the same time with smallpox.

Chapin[4] quotes Brooks as finding (1) a diplococcus in the anterior horns of the cord and not in the blood or meninges, and (2) a diplococcus in the blood during life.

Batten[5] found in the cerebrospinal fluid (*a*) a short, difficult staining bacillus (probably proteus vulgaris); (*b*) a fat coccus like that from infected wounds; (*c*) the ordinary staphylococcus.

Huber[6] on the third day identified in the fluid a diplococcus situated in the cells, typical of cerebrospinal meningitis.

Engel[7] found staphylococcus pyogenes albus, but the patient had also suppurating bone disease.

Barnes and Miller[8] identified the staphylococcus albus and pyogenes citreus in a case examined after death.

Bulow-Hansen and Harbitz[9] found in one case in a serum-agar culture from the spinal fluid obtained post-mortem a diplococcus or short double rod. Gram staining. This was not found in the sections of the cord; the organism was not virulent for animals, and seven other cultures were sterile.

Looft and Dethloff[10] in two cases found a Gram-staining diplococcus, which they identified with "meningococcus, type Heuber."

Geirsvold and Harbitz and Scheele[11] in 15 cases have found in the spinal fluid from lumbar puncture bean-shaped diplococci or tetrads growing in from two to six days on cultures. They stained by Gram's method, except in old cultures where this was variable. They were virulent for animals, causing atrophy, paresis, emaciation and death. Concetti[12] examined the fluid obtained by lumbar puncture in 9 cases of acute anterior poliomyelitis, in 2 cases the pneumococcus was present and in a third the meningococcus of Weichselbaum, the others were sterile. Pasteur, Fullerton and Maccormac[13] found a diplococcus in the fluid withdrawn from an acute case which caused a motor paralysis when injected into the subdural space of rabbits, but which could not be grown.

This represents all the positive evidence that it has been possible to find. A similar organism was found by Geirsvold in the throats of patients affected. The same organism was found in the throats of persons in localities not affected. On the other hand, most competent investigators have not found organisms in the spinal fluid during life or in the sections of the cord after death. Such findings are reported by Dauber, Goldscheider, Siemerling, Guinon Rist and others. Flexner[14] found that bacterial cultures, both in aërobic and anaërobic media, gave no results and that the cerebrospinal fluid was sterile, no inflammatory products being found in the fluid. The Mt. Sinai Hospital studies[15] showed only a moderate leucocytosis in a number of the cases, many bloods being normal.

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*Presented at the Annual Meeting of The Massachusetts Medical Society, June 9, 1908.

Achard and Grenet,[16] in a fourteen-year-old child, found pronounced lymphocytosis in the cerebrospinal fluid.

Fraenkel[17] and Niedner and Mamlock[18] found no such lymphocytosis.

That anterior poliomyelitis is an infectious disease is the commonly received opinion. Since it has been seen that this cannot be regarded as established by bacterial evidence so far collected, the other evidence in favor of this view will next be investigated.

The disease appears to be a pathological entity, but it must be remembered that it is possible that it merely represents the reaction of the spinal cord to various causes, such as sepsis, trauma, specific infectious diseases such as measles, chilling of the body and over-exertion. When the antecedents of the attacks are analyzed in this series of cases, it will be seen that these points must be considered.

Epidemic character. — That the disease is at times epidemic is unquestioned and established by ample evidence; nor are epidemics confined to any especial part of the world, to any one kind of climate, nor, so far as can be seen, to any especial environment.

Holt and Bartlett[19] have collected 35 epidemics, prior to 1907, recorded in literature, and have analyzed them and given the literature in full. The principal epidemics recorded are as follows:

France, near Lyons: 13 cases in town of 1,500.[20]

Italy, near Florence: 7 cases in fifteen days. Another epidemic, 17 cases in four months[21]; 2 epidemics in Conegliano of 9 and 13 cases (Fabis).[22]

Germany: In a polyclinic, averaging from 2 to 3 cases yearly, between 1892 and 1897, between May and December, 1898, there were 15 cases.[23]

Austria: 42 cases in and near Vienna in summer of 1898.[24]

Norway and Sweden: In Stockholm from 1888 to 1895 there were from 3 to 11 cases a year. In 1895, 21 cases from March to October, inclusive.[25] (Leegard[26]): July to October, 45 cases (preceded by colds in 6 cases, exanthemata in 7, over-exertion in 9. An epidemic of jaundice existed in 2 of the districts). Medin:[27] 2 epidemics in Stockholm, 1887 and 1895; 43 and 21 cases, respectively. (*Cf.* Johanessen for description of latter.) Rissler:[28] 5 epidemic cases with description of their pathology. Harbitz and Scheele[29] dealt at length with the prevalence of the disease in Norway. In 1905, there were 719 cases, with 34 deaths; in 1906, 334 cases with 34 deaths. Thus in the two years, 1,053 cases with 145 deaths (13.8% mortality). Most cases were typical anterior poliomyelitis, but cases were seen of acute ascending paralysis, and some encephalitis, but no clear cases of cerebrospinal meningitis. Other epidemics in Norway and Sweden were reported by Bergenholz in Umea, in July, 1881.[30]

Australia: Alston[31] reported an epidemic of 14 cases in Fort Lincoln, South Australia, in March and April, 1895. Wade reported[32] an epidemic of 34 cases, where pain was a prominent symptom, occurring in 28 of the 34 cases.

United States: Epidemics from widely separated parts of the country have been reported. Newmark[33] reported 4 cases in a village of 49 inhabitants near San Francisco. Bondurant and Woods[34] described 15 cases occurring in Alabama within a radius of 12 miles. Colmer[35] reported an epidemic in West Feliciana, La. Brackett[36] investigated 10 cases occurring in North Adams, Mass., in 1894. (As a rule the cases were situated along one of two rivers flowing through the town. The bladder and rectum were affected in an unduly large proportion of the cases.) J. M. Taylor[37] reported 7 cases occurring in Cherryfield, Me. Painter[38] described an epidemic in Gloucester, Mass., of 38 cases with 1 death. No common etiological factor was found. An epidemic in Poughkeepsie, N. Y., was observed in the summer of 1901 by H. L. Taylor, of New York.[39] One of the most extensive epidemics ever reported occurred in Rutland, Vt., and was investigated by Caverly[40] and McPhail,[41] where there occurred 132 cases in the summer of 1894, with 18 deaths. There was nothing in the climate, soil, locality or class affected to explain the distribution. In New York City, in the summer of 1907, occurred the most severe and extensive epidemic ever reported.

A fact[42] bearing perhaps on the etiology is found in the affection of five dogs on the Labrador coast in the autumn of 1907. The dogs were feeding on decomposed herring which was full of maggots, and were affected by a sudden paralysis, most marked in the hind legs. Three died and two recovered; no postmortem examination was made.

These data establish the fact that the disease is at times clearly epidemic, but from these epidemics no definite data have been obtained to explain the etiology of the disease or the mode of infection. The statement is made by Leegard that in the epidemic observed by him the disease spread along the lines of most extensive travel. The statement is made by Norwegian authors that localities visited by an epidemic were comparatively immune for a while.

Contagion. — Evidences of contagion or of a source of common infection, as from a milk supply, are not lacking and deserve consideration.

The conclusion of Geirsvold,[43] who investigated the Swedish epidemics, was that the disease was contagious, frequently several cases occurring in one family. This conclusion was concurred in by Harbitz and Scheele.

Holt and Bartlett, in their analysis of literature, found 40 instances in which more than one case of the disease occurred in a family or household. These were tabulated as follows:

2 cases in a family,	31 instances.
3 ,, ,,	5 ,,
4 ,, ,,	3 ,,
7 ,, ,,	1 instance.[44]

The intervals between the illness of the different patients were as follows:

Same day, or simultaneously,	8 instances.
Interval one day,	2 ,,
,, two days,	1 instance.
,, three days,	1 ,,
,, four days,	5 instances.
,, five days,	2 ,,
,, six days,	2 ,,
,, seven days,	5 ,,
,, eight days,	2 ,,
,, six weeks,	1 instance.

Experimental evidence. — As bearing on the fact that the disease may be of multifold origin, the following facts must be considered:

Stieglitz [45] experimented with lead poisoning in 36 animals, and in 1 guinea pig found characteristic changes with destruction of cells in the anterior cornua, with cell infiltration. Paralysis was present and death occurred in twenty-four hours.

Vulpian [46] produced, experimentally, paralysis of the extensors and lesions resembling those of poliomyelitis in a dog by lead poisoning, and in a case of lead poisoning found pronounced poliomyelitis with colloid degeneration and cell atrophy.

Phillippe and Gauthard [47] report a case of anterior poliomyelitis from lead poisoning, and Obrastoff [48] one from arsenical poisoning. Onuf [49] reported the case of a painter with flaccid paralysis of both legs, in whom autopsy showed lesions characteristic of the disease.

Turning from this to experimental data bearing on the subject, it is recognized in laboratories that paralysis occurs at times in young rabbits not experimented on. It has been described in guinea pigs [50] after the injection of toxin, which has been only partially neutralized by antitoxin, and very rarely after the injection of toxin alone, and in animals, especially rabbits, made septic, it frequently is seen.

Too much weight, therefore, cannot be attached to the following suggestive experiments:

Thoinot and Masselin [51] injected 43 rabbits in the marginal veins of the ear with a culture of the colon bacillus; 9 died of sub-acute general infection, and lesions were found in the anterior cornua of the cord; 34 of the rabbits survived, and were all paralyzed in a period varying from 2 days to six months. The paralysis affected first and most the posterior limbs, extending in severe cases to the anterior. The paralysis at times was unilateral in its predominance. Diarrhea was noted in all but three subjects, but the paralysis always recovered if the animal lived. In the cord congestive and hemorrhagic phenomena were noted, with degeneration of the cells in the anterior cornua of the cord, the peripheral nerves were normal and the muscles atrophied. The same phenomena appeared in all but 1 of 6 survivors of a similar injection of a culture of the staphylococcus aureus in 19 rabbits. Similar phenomena were reported by Gibert and Lion [52] from injection of the colon bacillus; by Bourges, from injection with the coccus of erysipelas, and by Vincent from injection of Eberth's and another bacillus, and by Charrin and Claude [53] by a pyocyaneus toxin.

Hoche [54] injected into the lumbar arteries of dogs aseptic pollen and other finely subdivided granules with the result of producing in the spinal cord lesions much like those of infantile paralysis in certain respects, embolic softening or infarcts resulting.

Roger [55] produced in rabbits a weakness of the limbs and muscular atrophy with degeneration of cells in the anterior cornua by the injection of a streptococcus of moderate virulence.

It would seem justifiable to sum up the evidence as follows: The positive bacterial findings are not convincing, only a few such being reported, and these not always agreeing as to the organism, whereas a very great number of cases are examined by lumbar puncture with negative results. But negative results do not disprove a bacterial origin for the disease, for the organisms may do their work and disappear, or the harm may be done by toxines and not by the bacteria themselves. If one cannot accept the positive evidence as convincing, one must also remember the true value of the negative evidence in this connection. The injection experiments do prove, however, that certain metallic poisons, bacteria and toxines have a selective action on the motor cells of the anterior cornua when present in the general circulation, that the paralysis of this type may be largely unilateral, that the posterior limbs are always more affected than the anterior, and that the lesions in the cord in such cases do not differ essentially from those of anterior poliomyelitis.

Distribution. — It became evident on grouping the cases that certain foci at widely separated parts of the state had existed. One occurred in Pittsfield, in the western part of the state, a city of 25,700 inhabitants (with 18 cases), and north and south of Pittsfield, along the lines of trolley travel, which is here extensive, appeared other cases in the adjoining towns. It did not spread east and west, in which directions the trolleys do not run. Of course, the trolley lines run in the most thickly populated regions, and the disease would naturally spread in the directions where most people were to be found. Still, it may be said, as in a Swedish epidemic, that the spread of the disease followed the lines of most extensive travel. There were no other cases reported in the western part of the state, except those directly adjacent to Pittsfield. Coming east through an agricultural country, there were no more cases reported until the valley of the Connecticut River was reached, where there were a few cases along the valley in the adjacent cities of Springfield, Holyoke, Northampton and South Hadley Falls, where in an aggregate population of about 127,000 there were 12 cases.

Another obvious center of the disease was to be found in the group of adjacent towns in the valley of the Merrimac River, consisting of Lawrence, Haverhill, Georgetown and Andover, where, in an aggregate population of about 117,000, there were 36 cases, a prevalence much less than in Pittsfield, but much more than in the Connecticut Valley.

Boston, with 609,761 inhabitants, reported only 36 cases, and the remainder of the cases were to be found in various parts of the state, mostly in the eastern part, but practically always in contiguous towns; that is, it was rare to find even one case in a town without finding a case in one or more adjacent towns.

The data from the study of the 234 cases in this series will next be taken up for consideration.

MASSACHUSETTS CASES IN 1907.

Agawam,		1	Malden,		3
Andover,	3	4	Mansfield,		1
W. Andover,	1		Marblehead,		1
Attleboro,		4	Medway,		1
Barnstable,		1	Melrose,		2
Blackstone,		1	Methuen,		1
Boston,	15	36	Milford,		5
Charlestown,	1		New Bedford,		4
Dorchester,	5		Newburyport,		1
East Boston,	2		Newton,	1	4
Jamaica Plain,	1		Chestnut Hill,	2	
Roxbury,	7		Newton Upper Falls,	1	
South Boston,	5		North Adams,		1
Brockton,		2	North Andover,		3
Brookline,		3	Northfield (East),		2
Cambridge,		9	Northampton,		1
Chatham (West),		1	Peabody,		3
Chelsea,		1	Pittsfield,		18
Dalton,		1	Plainville,		1
Danvers,		1	Reading,		1
Dennis,		2	Revere,		1
Erving,		1	Richmond,		1
Fall River,		6	Salem,		1
(Case No. 74, Tiverton, R. I.)			Somerville,	4	6
			W. Somerville,	2	
Framingham,	1	3	Springfield,		2
S. Framingham,	2		South Hadley Falls,		1
Gardner,		1	Stockbridge,		1
Georgetown,		1	Stoughton,		1
Gloucester,		3	Uxbridge,		1
Grafton,	1	2	Wakefield,		1
N. Grafton,	1		Wareham,		1
Great Barrington,		2	Wellfleet,		1
Groveland,		1	Westboro,		1
Hanover (West),		1	Westfield,		1
Haverhill,	12	14	Westminster,		1
Bradford,	2		Weston,		1
Hingham,		1	West Stockbridge,		1
Holyoke,		8	Weymouth (East),		1
Hudson,		1	Williamstown,		2
Lanesborough,		1	Winchendon,		2
Lawrence,		14	Winchester,		3
Lexington,		1	Winthrop,		1
Lowell,		6	Woburn,		2
Lynn,		4	Worcester,		9

This evidence tends rather toward supporting the contagious character of the disease, as established by its uneven distribution, extending from foci and not evenly scattered through the state; by its extension from Pittsfield along the lines of most frequent travel, and by the fact that there was rarely a case in one town without the occurrence of a case in the adjacent town or towns.

Following up still further the evidence of contagion: Other cases in the family were reported in 11 instances; other cases in the same house in 9 instances; other cases among acquaintances in 20 instances. That is, in 40 cases (17%), there was reason to look into the question of contagion.

The histories pointing to contagion were then analyzed. A child three and a half was affected, followed eleven days later by the father (reported by Dr. Pitcher, of Haverhill). Two brothers were affected at an interval of two days (Dr. Hubbard, of Holyoke). Two brothers were affected with an interval of two days (Dr. Philbrick, of Northfield). Two brothers were affected, interval not stated (Memorial Hospital, Worcester). Two brothers were affected at an interval of ten days (Dr. Boland, of South Boston).

Going outside of the family there were other suggestions to the same effect.

Dr. Hubbard, of Holyoke, reported 1 case, followed by another six days later in a playmate.

Dr. Croston, of Haverhill, reported a case which was followed by the similar affection in a playmate five days later.

Dr. Hayes, of South Boston, reported 2 cases occurring in playmates " at about the same time."

Dr. Kelley, of North Attleboro, reported a similar case in two children living opposite each other on the same street.

In 7 cases the statement was simply made that similar cases had occurred among the patients' acquaintances.

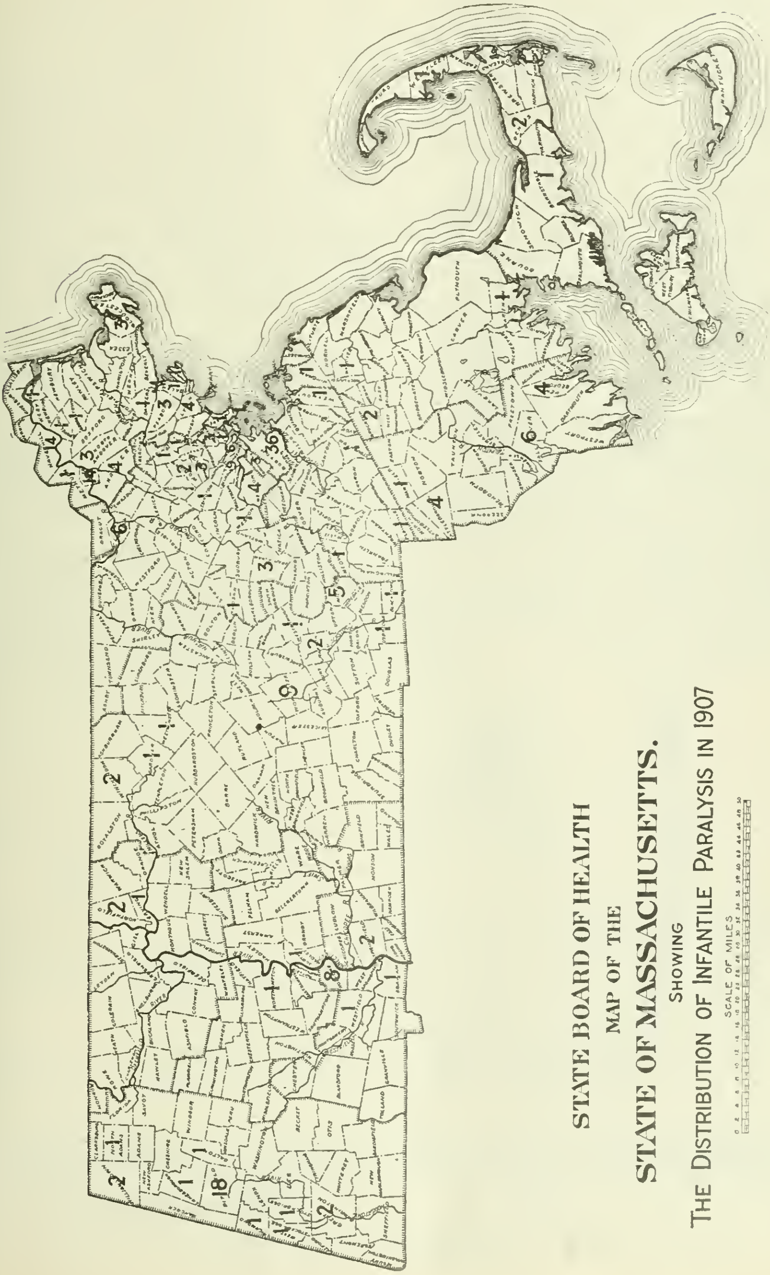
In one other instance a patient in the second house from the patient was affected and in another there were said to be two other cases on the same street.

The inquiry as to other illness in the family at the time brought out the fact that in several instances febrile disturbance existed in other children in the same families, a matter which is of interest and has been noted in certain epidemics reported. Such febrile attacks have been regarded as abortive cases (Bulow-Hansen, Buzzard, Harbitz and Pasteur).

Traumatism. — The frequency with which a traumatic history was given as preceding the attack was then analyzed. In 52 of the 234 cases such a history was given. A further analysis showed that in 3 of these cases the stumbling was probably connected with the attack. In 5 the history was not satisfactory or was too indefinite. In 9 the accident had occurred a month or more before the attack. Throwing out these cases there remained 35 cases where a clear history of accident preceded the attack, generally within a few days of the onset. These accidents were both slight and severe; falling out of bed or from a chair, falling from a bicycle or wagon, blows on the head, falling down stairs, etc., formed the bulk of the histories, but in most instances, where it was mentioned, it was stated that the child fell on the head.

Skeptical as one may be about the value of traumatic histories, it must be remembered that these histories are not from the hospital class, that they are obtained from the family physicians, who have reported the cases individually, and that they must be allowed considerable weight.

In 2 cases the child received a severe fright before the attack. In 4 a chill from falling into



STATE BOARD OF HEALTH
MAP OF THE
STATE OF MASSACHUSETTS.
SHOWING
THE DISTRIBUTION OF INFANTILE PARALYSIS IN 1907

water was attributed as the cause. In 3 overexertion was thought to have been the cause.

Season of onset. — The disease is well recognized as one that attacks children in the first dentition and as one that prevails in the late summer and early fall. In this it offers a striking resemblance to the prevalence of the gastro-intestinal diseases of children which affect children of the same age at much the same time of year. As to age, the largest number of cases occurred between one and two, as is always the case, 47 cases occurring in this year, and from then on the number of cases fell with more or less regularity to reach a level of from one to three each year after puberty was reached. There were 131 males and 103 females affected.

The greatest prevalence of the disease in these cases was in September and the least from January to June inclusive. From July it rose to reach its height in September and fell through October, November and December.

The cases of cerebrospinal meningitis occurring in Massachusetts in the year 1907 (412 in number) were then analyzed to see how the seasonal occurrence of that disease corresponds to the prevalence of infantile paralysis. In cerebrospinal meningitis the largest number of cases occurred in April and the smallest number in August, September and October. As the relation of the two diseases has been discussed of late, some authors regarding them as practically variations of the same essential disease, it may be said that if the two have a relation of seasonal occurrence it is that infantile paralysis largely replaces cerebrospinal meningitis during certain months.

The close correspondence between the age and season of occurrence of this affection and that of the gastro-intestinal diseases suggests the intestines as a source of infection, possibly from some bacillus contained in milk. In 201 instances, where the question was answered, in 152 the patient was a consumer of raw cow's milk and in 49 was not. That is, two thirds of the patients reported on might have received their infection in this way and the others undoubtedly were to some extent consumers of milk; on the other hand, it must be remembered that Geirsvold found in the throats of patients with infantile paralysis a diplococcus resembling that found in the spinal fluid, but in this connection it must also be remembered that this is not an unusual state of affairs in patients without anterior poliomyelitis.

Taking up other factors in the history bearing on etiology, investigation as to race and nativity showed nothing of importance.

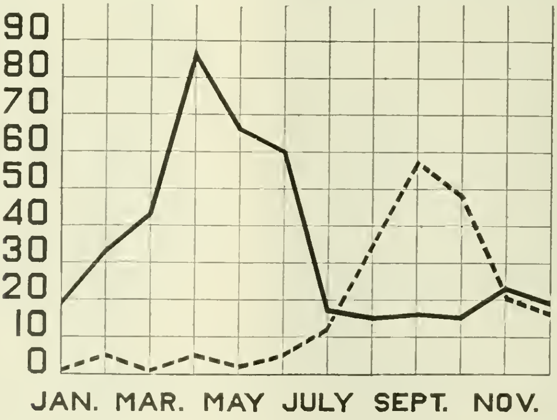
The reports on the conditions of the house in which the patients lived are of interest. One hundred and fifteen lived in detached houses; 110 in tenements.

As to the influence of dampness, 99 lived on the first floor; 65 on the second; 12 on the third; and 6 in the upper stories; 20 occupied the whole house.

Sanitary conditions were described as exceptionally good in 21. Good, in 123. Fair, in 55. Poor or bad, in 23.

The location of the dwelling was given as high and dry in 141. Damp or low or both in 76. "Medium" in 7.

Mosquitoes were reported as prevalent in 57 cases, and not prevalent in 156. Flies were prevalent in 90, not prevalent in 116. The house



DISTRIBUTION OF 234 CASES OF INFANTILE PARALYSIS ------
" " 412 " " CEREBRO-SPINAL MENINGITIS} ——
BY MONTHS (MEAN IN 1907)

was screened in 133 cases, and not screened or insufficiently so in 80.

Analyzing these data for what they are worth, it would seem that it was not an affection confined to the lower classes, as shown by the simple fact that 133 out of 212 cases reported had their windows screened, which is an evidence of a fair amount of comfort. It did not affect the dwellers in tenements as often as it did those living in detached houses. That dampness may be a factor of possible importance is indicated by the fact that 99 out of 202 reported on lived on the lower floor, and that in 76 out of 224 cases the dwelling was low or damp. It would not seem probable that 49% of the population of the state lived on the lower floor, or that 34% of the population lived in low or damp localities. It would seem, therefore, fair to assume that dampness was possibly a predisposing factor.

An inquiry as to whether any special disease was prevalent at the time in the locality elicited nothing of importance, and no instances of disease in the domestic animals of the family were found, except in one case, — distemper in a dog.

Condition preceding onset. — Various degrees of illness preceded the attack, malaise, headache and loss of appetite being the most frequent signs. This frequently preceded the attack for two or three days. The exanthemata had apparently some influence. Twice varicella occurred just before the onset, twice the paralysis occurred in the convalescence from measles and once a rash, thought to be scarlet fever, preceded the attack. The presence of a possible source of septic absorption was shown once in the existence of an abscess behind the ear, once in chronic otorrhea, once in a child vaccinated two weeks and once in a child vaccinated three weeks previously.

The degree of fever during the onset was as follows:

DEGREE OF ACCOMPANYING FEVER.

No fever,	12	
"Fever,"	75	(High, 8; moderate, 8)
Temperature 100°,	6	
,, 101°,	15	
,, 102°,	33	
,, 103°,	28	
,, 104°,	14	
,, 105°,	6	
Not noted,	3	

Other symptoms in the attack were as follows:

SYMPTOMS ACCOMPANYING ATTACK.

	Present.	Absent.	Not Noted.
Vomiting,	125	64	45
Brain symptoms,	54	65	115
Retraction of head,	64	84	86
Pain or tenderness, during or after attack,	126	78	30
Digestive disorders,	80	47	107
Disturbance of bladder function,	42	158	34
Disturbance of function of rectum,	44	152	38

The frequent occurrence of pain and sensitiveness during or after the acute attack is emphasized in this series and is not sufficiently recognized in general, frequently leading to errors in diagnosis. That it was present in 61% of all cases noted means that it is a symptom to be expected and remembered.

The duration of the acute attack was as follows:

DURATION OF ACUTE ATTACK.

1 day or less,	10 cases.
2 days,	19 ,,
3 days,	23 ,,
4 days,	17 ,,
5 days,	13 ,,
6 days,	9 ,,
1 week,	21 ,,
1–2 weeks,	33 ,,
2–3 weeks,	23 ,,

(A few longer durations are given.)

RELATION OF BEGINNING OF PARALYSIS TO ONSET OF FEVER.

Paralysis preceded the attack in	2 cases.
It occurred immediately after in	30 ,,
Within 12 hours,	10 ,,
Within 24 hours,	20 ,,
Within 48 hours,	25 ,,
Within 3 days,	28 ,,
Within 4 days,	21 ,,
In from 4 to 7 days,	34 ,,

(A few longer intervals are given.)

DISTRIBUTION OF PARALYSIS.

The distribution of the paralysis, when at its worst, was as follows:

		Massachusetts Cases, 1907.	Late Cases from Children's Hospital.
Right lower extremity,		30	216
Left lower extremity,		31	239
Both lower extremities,		41	130
Right arm,		3	5
Left arm,		14	5
Both arms,		3	0
Right arm, left leg,		8	5
Right arm, right leg,		11	7
Left arm, left leg,		16	8
Left arm, right leg,		1	2
Both arms, right leg,		0	0
Both arms, left leg,		2	0
Right arm, both legs,		4	1
Left arm, both legs,		11	1
Both arms, both legs,		23	3
Back,	In connection with other paralysis,	40	
Abdomen		19	
Face,		15	
Not noted,		28	

For purposes of comparison a table is given of 635 late cases reported from the orthopedic clinic of the Children's Hospital, Boston,[56] showing how much less extensive is the late distribution of the paralysis than is the early distribution. It is a matter of common information that a period of spontaneous improvement follows almost directly on the onset. This period lasts from two months upward, during which the paralysis limits itself most often to one or two members, generally to the lower extremity.

It is to be regretted that in our cases the notes of the final condition were not sufficiently full to enable us to make a table of the end results.

A fact of interest, not recognized at any rate by the orthopedic surgeons, who from seeing late cases have come to the conclusion that permanent and complete recovery from the disease is at least extremely rare, is found in this series of cases, which indicate that apparently complete recovery is not unusual, and 18 well-authenticated cases of what appears to have been complete recovery of muscular power have been reported in this series of cases.

The paralysis in these cases was located as follows: Both lower extremities, 4; one lower extremity, 5; arm and leg, same side, 2; hemiplegic distribution, 2; one arm, 3; general slight paralysis, 2.

The time given for recovery varied quite evenly from two to twelve weeks, but 2 cases of recovery in from twenty-four to forty-eight hours were given. These were as follows:

Dr. Palmer, of South Framingham, reported a case, six months old, where a total paralysis of the left arm followed twenty-four hours after an attack of fever. The loss of power lasted twenty-four hours and wholly disappeared.

Dr. Philbrick, of East Northfield, observed a child, three years old, attacked by fever of 101°, retraction of the head, and twitching of the face, and the attack was followed immediately by some paralysis of both arms and legs. Recovery followed in forty-eight hours. The treatment consisted of free catharsis.

The tabulation of the time of recovery was as follows: twenty-four hours, 1; twenty-four to forty-eight hours, 1; two weeks, 2; three weeks, 1; one month, 2; six weeks, 1; seven weeks, 1; two months, 3; two and one-half months, 2; three months, 3; gradual, 1; total, 18.

There seems no reason to doubt the authenticity of these cases, and on the whole the histories suggest that they were to be classed among the less severe cases of the series, but such histories as the following were not lacking:

Case CV. (Dr. Hubbard, of Holyoke.) Temperature, 103°; vomiting; brain symptoms; retraction of the head; pain in the left leg; digestive disturbance; paralysis of the left leg and thigh. Complete recovery in six weeks. If such cases as this are not true anterior poliomyelitis, they certainly resemble it sufficiently to warrant the statement that cases of apparent severity, not to be distinguished from anterior poliomyelitis, may apparently recover entirely in a few weeks, a course quite in accord with the experimental paralysis produced in animals above alluded to.

Death occurred in 11 cases; once there was a complicating pneumonia, 4 times the fatal result was apparently due to an involvement of the respiratory muscles by the paralysis, once death was preceded by a temperature of 105° and delirium. There was no information obtained in any case by autopsy.

The examination of the urine showed nothing of importance, 63 out of 66 urines examined being reported as normal or showing only evidences of febrile disturbance, while 3 contained albumin.

The examination of the blood was reported in 11 cases, 9 being normal, 1 showing a "low color index," and 1 showing a leucocytosis associated with a complicating lobar pneumonia.

SUMMARY.

The evidence as to the etiology of the disease may be summed up as follows: The sudden febrile onset and the character of the onset suggest infection, and there is a general impression that the disease is infectious; but the case is not proved by positive bacteriological data, so far collected, and most bacteriological examinations are negative. But in this case negative evidence does not disprove the theory of infection, for the organism present, if one exists, may liberate a toxine and disappear.

The seasonal occurrence, the age of the children selected most commonly, and the frequent association of intestinal disturbance with the onset suggest some intestinal infection as the possible source of the disturbance. It must be remembered that the disease follows the curve of summer diarrhea as to age and season and follows the curve of cerebrospinal meningitis as to neither.

From the evidence at our disposal, it seems reasonable to suspect that some bacillus, probably an anaërobic one, reaches the intestines in milk and there liberates a toxine which is absorbed and carried to the spinal cells by the blood current. Hence, the findings in the cerebrospinal fluid withdrawn by lumbar puncture are negative in most cases.

But it cannot be regarded as certain that infantile paralysis is always caused by the same organism, nor even that it is a pathological entity. It may be simply the clinical expression of the reaction of the spinal cord to one of several causes, of which infection may well be one. A similar pathological condition has been seen to arise from lead poisoning from the experimental injection of bacteria in rabbits and from the injection of toxine in guinea pigs. Allowance must also be made for the possible influence, as shown in this report, of traumatism, dampness, overfatigue, the exanthemata and foci of pyogenic infection as possible causes of infantile paralysis, or a disease indistinguishable from it. At present we must observe and study and collect material, remembering that we may be dealing (1) with a specific infectious disease; (2) with an infection due to one of several organisms, or (3) with a disease of more than one origin, not always necessarily infectious.

As to contagion, the data contained in this report are not sufficient to establish this characteristic, although the distribution of the disease, its spread from foci, the involvement of contiguous towns, the spread along lines of most frequent travel, and the very suggestive histories given here may well warrant us in suspecting it and collecting further data and no harm could arise from the isolation of such cases from other children during the acute attack.

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OSTEOSARCOMA OF THE KNEE-JOINT.

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Within the last few years a number of papers on sarcomata in general have been published, and in them the results of various lines of treatment have been tabulated. The writers of the present paper, however, purpose to deal with a single variety of osteosarcoma, involving a single anatomical structure, namely, the knee-joint, and to give the results of radical operative measures in a series of 15 cases.

The term "osteosarcoma of the knee-joint," as here used, is restricted to the myelogenous type, which primarily involves the epiphysis of the femur or tibia, but which secondarily invades the joint itself and the peri-articular structures, by growth and destruction of the bony shell. By this definition are excluded those subperiosteal sarcomata which originate from the periosteum of the diaphysis of either of these bones at some distance from the joint, and which only encroach upon it after considerable growth along the shaft of the bone. It seems wise to restrict this paper to this limited field for the following reasons: Among the long bones, the lower extremity of the femur and the upper extremity of the tibia are the most frequently affected by myelogenous sarcoma. This prevalence naturally furnishes a larger statistical basis from which to draw conclusions; also, on account of its location and similarity in signs and symptoms to other chronic diseases of the knee-joint, it presents the greatest difficulties of differential diagnosis among the osteosarcomata.

From an examination of the literature on sarcomata in general, it is evident that there is a wide difference of opinion at the present time as to what is the best method to pursue in eradicating these growths and preventing their recurrence. By some, radical operative measures are advocated, and by others, the use of more conservative surgery, x-ray and toxin treatment. These latter views, as expressed by well-known and experienced operators, carry much weight, and yet the writers of this paper believe and feel that they can substantiate the allegation, that there is still room for debate as to what line of treatment is indicated in a given case from the series to be quoted later. And also, that where a central osteosarcoma of the knee-joint exists, a radical operation will insure to the patient the best chances of cure.

In support of what has been said regarding differences of opinion as to which method of procedure should be adopted, the following extracts from the literature may be quoted: Butlin, after discussing a large number of cases drawn from English and German sources, says: "The only hope of the future is in very early diagnosis and in very high amputation." McCosh, after reviewing 125 cases of sarcoma at the Presbyterian Hospital (New York), decides that amputation, rather than resection, is for the best interest of the patient. Coley, although formerly an advocate of early and high amputation, now advises, as a routine procedure in sarcoma of the long bones, the preliminary use of the mixed toxins of streptococcus and bacillus prodigiosus. If the growth, after two or three weeks, is not seen to be influenced by the use of toxins, he then advises either immediate resection or amputation, followed, after recovery from the operation, by prolonged use of the toxins to prevent recurrences Babcock and Pfahler come to the conclusion that "radical and early operations have not clearly decreased the tendency to metastasis and recurrence in sarcoma." And "High amputation, usually unnecessary and unjustifiable for the more benign sarcoma, is usually unavailing against the more malignant." They advise subcapsular enucleation, prolonged Roentgenism, topical applications, and the use of toxins. Painter, although he gives no direct conclusions in his recent article, seems, from an analysis of the treatment in his case reports, to advise as a routine procedure either enucleation or amputation. These various statements indicate in a brief way the diversity of opinions held by operators to-day as to whether conservative or radical means should be used in the treatment of sarcomata in general.

It is evident at once that to establish conclusively any one method of treatment as the best, investigations must be conducted along some very definite line. Therefore, logical conclusions can only be drawn in these cases from the results of a single operative procedure, in one particular form of sarcoma, in a specific location. The comparative frequency of this condition, not only in the knee-joint, but also in other joints, naturally brings the orthopedic surgeon in contact with it, and, indeed, there seems to be no valid reason why this disease should be referred to the general surgeon for treatment, inasmuch as osteosarcoma of the knee-joint simulates several conditions which properly belong to orthopedic surgery. Moreover, pathologically it so closely resembles that most common of all chronic diseases of the knee-joint, namely, tuberculosis, that one must resort to the pathologist for positive diagnosis. For the primary focus of the neoplasm begins in the epiphysis adjacent to the joint, just as tubercular osteitis does, and later invades the joint in a similar manner. Thus the location, symptoms and course of central osteosarcoma of the knee-joint present what would seem to be a purely orthopedic problem.

That the different forms of sarcoma of the long bones, owing to their varying malignancy, cannot all arbitrarily receive the same line of treatment is perfectly apparent. For, although in some instances removal by extensive operation results in a permanent cure, in others, and perhaps a large majority, the most radical procedures are futile, and the victim dies either from recurrence or metastases. This is particularly true of the subperiosteal sarcomata of the long bones, concerning which several leading articles of late have extensively treated. The central type, however, shows a much more favorable prognosis, and although recurrence of the growth may follow the most radical operation, yet there is sufficient proof of permanent cure following such a procedure to warrant its recommendation. A large number of cases, in which the pathological report showed a malignant growth of myelogenous origin, have been reported as cured years after the operation.

The early symptoms of central sarcoma differ entirely from those of periosteal sarcoma for two important reasons, namely, the location of the growth and the rapidity of the development. The central variety is situated in the epiphysis of the bone near the joint, and being confined within the bony cortex in the early stages, it is slow of growth, resembling other chronic disease of the bone with secondary involvement of the joint. The periosteal tumor, however, is located in the diaphysis and is superficial. Moreover, it is much more rapid in its development, and is not unlike other easily recognized malignant growths found in any part of the body.

In order that conclusions may be safely drawn as to what method of treatment is advisable in a given case of osteosarcoma of the knee-joint, one should be conversant with the pathology and development of these growths. For in dealing with malignancy it cannot be too keenly appreciated that what at first may seem a comparatively harmless condition may develop later into a most malignant tumor which resists all treatment. Myelogenous or central sarcomata of the femur or tibia are, practically speaking, of three varieties, the round-celled, the giant-celled and the alveolar, or so-called endothelioma. The round and giant-celled types have their origin in the marrow of the epiphysis. They seldom develop in the diaphysis, though by extension they may involve it later. At first there are no external changes in the contour of the joint, the only alterations taking place in the cancellous tissue of the epiphysis, where the growing tumor absorbs and destroys the bone. Later, it pierces the bony shell, invades the joint cavity, attacks the periarticular structures and produces enlargement and irregularities. Endothelioma of bones is a rare condition, only 23 cases having been reported to date. In these, the femur was involved eight times, the tibia three, while the tumor made itself manifest in the neighborhood of the knee-joint only twice. The endothelial tumor begins in the central portion of the bone, spreads along the marrow cavity, and, passing through the bone, invades the surrounding tissues. This type of sarcoma takes its origin from endothelium of perivascular lymph spaces. Primary sarcoma of the synovial membrane of the knee-joint, according to the literature on the subject, has been observed but ten times. For practical purposes, therefore, we are dealing in this paper with either a round-celled or giant-celled sarcoma, or, as sometimes happens, a combination of both.

From a clinical study of these cases in the early stage of the disease, there are no points which are diagnostic from other chronic diseases of the knee-joint at a similar period of development. When first noticed, there is some enlargement of one of the bones near the joint, and accompanying symptoms, such as pain, limitation of motion, and tenderness, are present. Subsequently, however, the appearance of the joint changes, due to an enlargement of all the articular structures. Finally, after the disease has broken through the bony shell, and the surrounding tissues have become invaded, the progress is as rapid as in any of the most malignant types. In some instances, notably following a conservative operation or after the tumor pierces the bone by its own growth, this change in malignancy is most marked. It is therefore obvious that sometimes what apparently is in the beginning a semi-malignant growth, becomes fulminating as soon as it appears extra-cortical. This invasion or spread of the tumor may come through extension at the circumference of the growth, through contact with surrounding tissues in operating, or by detached tumor cells which circulate in the blood stream to other parts of the body.

As has been mentioned earlier in this paper, central sarcoma of the knee-joint closely resembles tubercular arthritis. In fact, it may be said, in a general way, that all the symptoms found in one may be present in the other. For instance, as far as the history of the case goes, one is as likely to find a history of previous injury in tuberculosis as in sarcoma. The fallacy of depending on previous or co-existing family tuberculosis in any case of joint disease has been demonstrated too often to need comment in this paper. Moreover, the occurrence of these two diseases as regards age is very similar. In respect to signs and symptoms there is also a remarkable agreement. Temperature variations are present in both, and although in the early stages only slight impairment of general health may be the rule, later, loss of weight and strength accompanies both diseases, together with limitation of motion and pain of varying degree.

From what has been said thus far, it is perfectly apparent that clinical signs and symptoms do not form a sufficient basis for differential diagnosis between sarcoma and tuberculosis of the knee-joint. The only reliable guide in discriminating between these two conditions is careful, well-directed treatment. For, as is well known, under fixation, traction and protection, the symptoms of tuberculosis in a short time subside, while under the same treatment the symptoms of sarcoma continue to increase in severity. In this way a positive diagnosis can be made within a reasonably short period of time. If, in a given case, the proper treatment fails to relieve the condition, an early exploratory incision is indicated, and a microscopical examination should be made to determine the exact nature of the growth. Against this procedure has been advanced the danger from extension or distribution of the growth, but this risk is far less than that which arises from the usual method of temporizing. It may be said in general that the error is often made of treating these cases conservatively for too long a period, waiting to make a positive diagnosis until it is too late to save the patient's life. For during this delay, metastases may have occurred, and radical measures are then useless.

In reporting certain cases, the term "recurrence" has been used, referring to the reappearance of sarcomatous growth years after operation, but it seems doubtful if these cases could properly be called the results of metastases, since it is not probable that metastatic tumor cells would be carried in the blood stream to some other portion of the body, remain quiescent for years, and then develop. Such cases must be the result of a separate and distinct sarcomatous process arising "*de novo*."

The number of cases here reported of central osteosarcoma of the knee-joint, and from which the following conclusions are drawn, is believed to be the largest number of this class tabulated at one time up to the present date. There are, in all, 15 cases of this type, but no attempt is made to report them all in detail, as they are so similar in their nature and progress that it is not considered necessary. The location of the primary growth, the method of surgical intervention, and the length of time since operation without recurrence, however, are stated. There are two cases which are reported in particular, inasmuch as they present some of the phases mentioned in an earlier part of the paper, and will serve as a practical illustration of the different points in question. The following history of one of these cases shows the danger of too much conservatism in the treatment, the rapid growth of a central sarcoma after the peri-articular structures are involved, and the benefit derived from an amputation even after extensive involvement of all the parts surrounding the joint.

H. E. M., male, aged twenty-four years, laborer; family history tubercular. In July, 1902, the patient after retiring noticed for the first time slight pain in the right knee-joint. This continued for several nights, but as he did not suffer during the day, he gave it little attention. In September of the same year he wrenched the joint in climbing over a stone wall, and the night pain returned. There was also slight discomfort during the day, and in a few weeks he noticed some stiffness in the morning, which passed away as soon as the limb was used. The condition of the joint gradually became worse and he finally consulted his family physician, who pronounced it rheumatism and applied local treatment, together with large doses of salicin. Under the treatment the stiffness disappeared and the pain lessened so much that he resumed his work. In December next, he injured this joint again by slipping on the ice, and was obliged to use crutches. The knee at this time was somewhat swollen, due to the accumulation of synovial fluid. The treatment consisted of strapping the joint with adhesive plaster, and in a few weeks the swelling subsided. In February of the following year, the pain and stiffness became more marked, and under the family physician's advice, the joint was subjected to "hot-air" treatment, which was continued until the last of April with some abatement of the pain and stiffness. About this time it was noticed that the inner condyle of the femur was enlarged and all local treatment was discontinued for two months, during which the patient was allowed to go about on crutches. In June the condition of the knee was worse and after consultation a plaster-of-Paris cast was applied. This was worn for six weeks with scarcely any improvement, and upon its removal the joint was noticeably increased in size. Pain during this period of treatment by fixation continued, but the sensitiveness of the joint disappeared. The last of July a surgeon from a nearby town was called in consultation, pronounced the case tuberculosis and advised operation. The following week an incision was made into the joint and a gauze wick inserted. Infection followed but cleared up in a few weeks and the wound healed. The patient was first seen by the writer August, 1903, and an excision advised with the privilege of making an amputation, after exploring the joint, if it was thought advisable. The joint when opened showed such changes as those usually found following chronic inflammation. There was also considerable enlargement of the inner condyle. In testing the bone with a blunt instrument, the shell suddenly gave way, disclosing a friable growth which had destroyed all the cancellous tissue of the condyle and a large part of the compact tissue, leaving barely enough bone to separate it from the surrounding soft tissues. Further exploration showed this cavity to be about the size of a hen's egg, and the material filling it looked to be malignant, but as the walls were well defined and as there was apparently no extension of the disease beyond this limit, it was decided to make an excision. This was done and a careful examination of the parts left did not show anything which looked like diseased tissue. The wound was closed in the usual manner and the limb placed in a plaster-of-Paris splint.

Microscopic examination showed the growth to be a round-celled sarcoma. An examination of the tissues removed from several different places around the bone did not show any malignant disease. The dressing was changed in ten days and the patient was reported as doing well. Five weeks later union was very good and the first cast was removed and one applied without any opening. This was worn for four weeks and the patient was allowed to go about on crutches. At the expiration of this time, he applied to his physician for relief from the cast, which was causing much discomfort over the site of the excision. When the cast was removed it was found that the tissues on the outer side of the lower end of the femur were involved, and that the growth had developed rapidly. Another operation was refused at that time, but some three weeks later a high amputation was done. At this time the growth had assumed a prodigious size, the part measuring more than double that of the other knee. The growth had also broken through the skin in several places and there was considerable bleeding from it. The amputation healed by first intention and in a short time the patient was around on crutches. Some four years have passed since that time and the patient's general health is excellent.

Another case which resembles the above in some respects is reported as follows: J. W. C., female, aged seventeen years, student, seen for the first time in January, 1904, and the following history obtained: About one year previous to this date, the left knee commenced to pain her. She did not give it much attention at that time, but some months later she consulted her family physician, who thought she had torn one of the cartilages of the joint. A brace was produced and worn for several months without any improvement. The joint increased in size and by actual measurement, ten months after she first noticed the trouble, it was one fourth larger than the other knee. About one month before the writer saw it, an incision had been made into the joint by a surgeon to determine the nature of the disease. It was pronounced chronic osteomyelitis, and, as amputation had been refused, a drain was inserted and the usual after-treatment followed. Some two weeks later, the wound not having closed, it was noticed that there was a growth in the tissues around the opening. The tumor rapidly increased in size, and at the time that the writer first saw the case the knee was as large again as its fellow, and there was considerable discharge from it with some odor. Immediate amputation was advised and accepted. Microscopic examination showed round-celled sarcoma. It has now been more than four years since the amputation was done and the patient is in excellent health.

The other 13 cases do not present any striking features, and in the main resemble each other so closely, that they do not need separate mention. The epiphysis of the femur was involved in 11 cases, and the epiphysis of the tibia in 4. More than half of them were seen before the growth was extensive, and in only 2 instances has the growth returned. These 2 cases were well advanced, and the subsequent examination showed that the inguinal structures were undoubtedly affected when the amputations were made. The microscopic examination in every case showed the tumor to be of the round-celled type. Excision of the joint was made in 4 cases, 2 of them on account of a previous diagnosis of extensive tuberculous disease having been made, and two in the hope of saving the limb. In all 4, a later high amputation was necessary as the growth had returned. The time which has elapsed since operation and the present day in these cases varies from two to seven years. In this series of 15 cases there have been 2 deaths from recurrence, which leaves a percentage of 86 for those that have recovered.

CONCLUSIONS.

From the above experience, a radical measure, such as an amputation, for the central variety of sarcoma of the knee-joint is advised for the following reasons;

A. Early and high amputation gives the largest percentage of recoveries without recurrence.

B. Treatment by the use of toxins, which seems to be a useful adjunct, but alone, according to present statistics, gives only 15% of cures in all varieties, cannot be entirely depended upon.

C. Immediate death following operation seldom occurs if the previous condition of the patient is fair.

D. Resection is of doubtful benefit, and, in cases where there is so much at stake, should not be attempted.

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THE ABUSE OF ALCOHOL IN THE TREATMENT OF CHILDREN'S DISEASES.*

BY CHARLES W. TOWNSEND, M.D., BOSTON.

Among the most frequently used remedies in the diseases of children, alcohol probably ranks first. With its long reputation as a stimulant, it is natural that alcohol should be given both in the acute and in the chronic diseases of children. If the physician does not order it, the parents are apt to suggest its advisability in all exhausting illnesses. The very name pneumonia, for example, suggests to most parents and physicians the use of alcohol to stimulate the infant or child, so as to carry it through the exhausting attack of this dreaded disease. The same may be said of diphtheria, although, fortunately, antitoxin has largely robbed alcohol of its rôle in that affection. In the prolonged summer diarrheas, many of which take on a decided septic character, alcohol is the sheet anchor of many practitioners, and the drug is given in large amounts.

If, however, we are to believe the conclusions drawn by some recent students of the question, that alcohol acts as a narcotic and depressant in small as well as in large doses, a halt should be called to the indiscriminate use of this drug. However this may be, and it is not my intention to discuss the matter here, it would be well for a moment to consider the differences in the effect of alcohol in children and in adults. Most adults have a firm belief in the stimulating action of alcohol, and are probably benefited by their faith in its use in exhausting illness. This belief is, of course, absent in infants and young children. Again, children live in the present. If they are comfortable they do not fret about past sufferings, nor anticipate troubles to come. Adults, on the contrary, no matter how comfortable they may be in the present moment, often worry about past or future suffering, about domestic affairs and financial matters. Alcohol in acting on the higher centers, whether the action be a depressing one or not, appears, at least, to act as a stimulant by making the patient forget his worries for the time being. Whether the general and lasting effect be a good one or not need not be discussed here, but the point I wish to make is that these partially psychotherapeutic actions of alcohol, which may have an immediately good effect in adults, are largely absent in infants and children. Another difference between children and adults as regards alcohol is that to many adults alcoholic drinks are pleasing to the palate, while they are generally distasteful to children. Furthermore, in some adults the use of alcohol has become habitual, — a drug habit,— and this may require its continuance during disease. It is, of course, rare that this latter state of affairs exists in childhood.

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* Read before the New England Pediatric Society, May 6, 1908.

In the gastro-intestinal disturbances of summer, due primarily to infected food supply, the use of alcohol in the form of brandy or whiskey and of proprietary food extracts, containing often a large amount of alcohol, is common. The most important factors that make towards the recovery of the infant in these diarrheal diseases, are, first, a cleansed and unirritated gastro-intestinal tract, and, secondly, a bland and unirritating food that can be assimilated. Any food or drug which interferes with these two factors is distinctly a handicap. Food digested and absorbed is the best stimulant such an infant can have. The use of alcohol sometimes makes the difference between a quiet and an irritated regurgitant stomach.

Acute lobar pneumonia is the type *par excellence* of a self-limited disease. It runs an almost universally favorable course in children and infants who are not weakened by other disease, or handicapped by injudicious drugging, or overwhelmed by overheated and foul air, and by heavy poultices or pastes. Yet how often, with the best intentions in the world, do we see infants suffering from this disease given alcohol, often in large amounts. I am convinced that these cases do far better with no alcohol at all, and my observations in a large number of cases of this disease would bear out the theory that the action of alcohol in any considerable amount is a depressing one. Whether small doses are harmless or not it is difficult to discover.

In conclusion, I would relate a case of pneumonia seen several years ago where alcohol was used not wisely but too well.

A. B., a female infant, twenty-two months old, was suddenly attacked with pneumonia during which the temperature ran a high course, and the infant was considered desperately ill. Although the temperature came to normal, the child remained in a stupor, did not recognize its parents, showed some rigidity of the muscles and had a convulsion. The diagnosis of meningitis was made, and I was asked to see the child in consultation after these symptoms had continued for four weeks.

The infant was pale, limp, stupid looking, and did not seem to notice anything nor to recognize its parents. There was no retraction of the neck, no Kernig symptom, and the pupils reacted to light. The temperature was normal, and physical examination of the chest showed nothing abnormal.

On investigation it was found that the nurse had continued to give a dram of whiskey every hour, as first prescribed during the acute attack. In addition to this, the infant was receiving daily seven teaspoonfuls of a proprietary food whose strength in alcohol was equal or superior to that of whiskey.

It is needless to say that the diagnosis of meningitis was carefully modified, and the infant made a good recovery.

A MODIFICATION OF THE V. DRIGALSKI-CONRADI LITMUS-LACTOSE AGAR, FOR THE ISOLATION OF B. TYPHOSUS.

BY DONALD GREGG, M.D., BOSTON.

(From the Laboratory of Hygiene, Harvard Medical School.)

In the investigation of a large number of specimens of feces and urine from persons with history of recovery from typhoid fever, the medium devised by Von Drigalski and Conradi proved not to be wholly satisfactory. It contains a special litmus solution and crystal violet stain, and the agar plates prepared according to the method recommended are blue-violet in color and semi-transparent. On this medium, after twenty-four hours' incubation, colon bacilli form reddish colonies 3 to 6 mm. or more in diameter, while typhoid bacilli form smaller colonies, bluish in color, and otherwise resembling drops of dew. The difference in color is not always the same in degree; it appears to depend upon variations in the reaction of different lots of the medium and in the thickness of the agar plates, and produces a confusing modification in the appearance of the colonies, making it difficult to differentiate, on a semi-transparent background, between a bluish-red colon colony and a reddish-blue one of typhoid.

To overcome the difficulty and to make sharper the difference in the appearance of the two kinds of colonies, the method of preparing the medium was so modified that the resulting plates are opaque and of a pale robin's-egg blue color. Their appearance is not affected by slight variations in reaction; and, as the material is opaque, the thickness of the agar layer makes no difference. Colon colonies grown on them are dark strawberry-red in color, and the acid produced, acting upon the substance upon which depends the opacity, dissolves it and makes corresponding translucent spots. Typhoid colonies, on the other hand, produce no such change, but grow with the same dewdrop-like appearance that characterizes them when grown on the unmodified agar. The usual differences in size and shape of the two kinds of colonies and the inhibition of contaminating cocci and molds by the crystal violet are in no way affected. The use of this modified agar makes isolation of *B. typhosus* from feces a far less difficult undertaking, and repeated tests have shown the results to be very certain.

The method of preparing the modified medium is as follows: Boil 9 gm. of beef extract in 2,000 ccm. of water; add 20 gm. of Witte's peptone, 20 gm. of nutrose and 10 gm. of sodium chloride, and, after one hour's boiling, add 70 gm. of the best agar and boil again until the agar is thoroughly dissolved. Filter and make filtrate faintly alkaline to litmus. Boil 260 ccm. of Kubel-Tiemann litmus solution for ten minutes, add 30 gm. of C. P. lactose and boil again for fifteen minutes, and then add this to the fluid agar. Next add 2 ccm. of a hot sterile solution of 10% anhydrous sodium carbonate and 20 ccm. of crystal violet (.1% B. Höchst). Pour the medium into a sufficient number of small flasks, 200 ccm. into each, and place the same in the refrigerator until needed. When new plates are to be prepared, melt the contents of a flask thoroughly in the water-bath and add thereto 10 gm. of C. P. calcium carbonate. After thorough mixing, pour into Petri dishes while the calcium carbonate (which gives the opacity) is in suspension.

In reporting this modification of an old method, I desire to express my thanks to Drs. Charles Harrington and William F. Boos for advice and assistance.

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Clinical Department.

REPORTS OF TWO CASES OF RUPTURED GALL BLADDER AND A CASE OF PERFORATING GASTRIC ULCER.

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The following cases are reported to show what can be accomplished by operation when these acute perforations occur and are promptly diagnosed, and what dire results follow when the symptoms are so masked as to make the condition unrecognizable.

CASE 1. RUPTURE OF GALL BLADDER; SEVERE HEMORRHAGE FROM GASTRIC ULCER; OBLITERATING APPENDICITIS; CHOLECYSTECTOMY; MAYO'S NO-LOOP GASTRO-ENTEROSTOMY, RESECTING THE LIGAMENT OF TRIETZ; APPENDECTOMY; RECOVERY.

Mr. S., a gentleman fifty-eight years of age, was seen in consultation with his son, a practicing physician, on Jan. 27, 1908, and the following history was elicited: His father, who had had stomach trouble all his life, died from the effects of this condition at the age of sixty, and one aunt died of cancer of the stomach at seventy-four. Except for a tubercular history, there was nothing else bearing on his case. Between the ages of eighteen and thirty-five he had had several hemorrhages and was thought to have had tuberculosis; since that time he has grown stronger and has enjoyed very good health except for some digestive trouble, at times. For the past year has had an attack of acute indigestion on an average of about once a month; has severe pain in epigastrium, lasting for two or three hours, with nausea and vomiting; has never vomited any blood; has considerable distention with gas; sour stomach; water brash; has lost 45 or 50 lb. in the past year, due chiefly to a restricted diet and confinement; has had a slight rise of temperature at times. He is always troubled with the gas distention and epigastric pain whenever anything heavier than semi-solid diet is taken.

Examination. — There seems to be no enlargement or distention of the stomach; some tenderness over the pyloric region; no tumor; some tenderness over the region of the gall bladder; liver, heart and lungs negative; urine negative; slight icteroid color of the skin; conjunctivæ slightly yellowed for the past few days and during this time he has been very much depressed; pulse 60, full and rather tense.

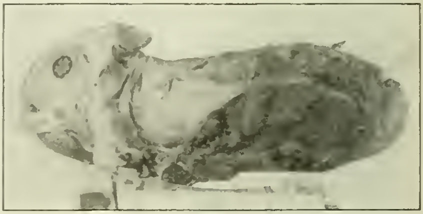
Owing to the inability to pass the stomach tube, no satisfactory test of the stomach contents has been made; a test meal was given, but had to be diluted in order to induce him to vomit; a test of this vomitus showed an absence of hydrochloric and lactic acids.

The following day, while straining at stool, he experienced a sharp pain in the epigastrium, vomited a considerable amount of clotted blood, became more or less collapsed and continued to have severe pain in the upper abdomen and was only partially relieved by the hypodermic injection of $\frac{3}{8}$ gr. morphine. I saw him two hours later and made a diagnosis of perforating ulcer of the duodenum and advised immediate operation.

His pulse at this time was 110 and temperature 101° F.

He was taken to St. Vincent's Hospital and after making a blood count, which showed a leucocytosis of 14,500, operation was begun four hours after perforation. His temperature had risen another degree, but the pulse was practically the same and of good volume.

Under ether, an incision in the mid line was made, extending down to the navel; some yellowish fluid was seen to well up into the wound; a careful examination of the stomach failed to reveal a perforation; the gall bladder was found to be adherent to the transverse colon and had perforated just at the margin of these adhesions. I did a no-loop gastro-enterostomy and found the ligament of Trietz abnormally developed and cut it back as recently suggested by Mayo, so as to prevent this loop formation; the gall bladder was then excised and a drain passed down to the duct to drain some slight oozing coming from the bed of the gall bladder, which was sutured over after Moynihan's method; the appendix was found to be occluded at its base and was hurriedly removed; the abdomen was flushed out with hot salt solution and a stab made above the pubis for drainage, in the Fowler position, which was used as soon as the patient was placed in bed. His condition was quite as good at the end of the operation as when we began, with a pulse of 104 and of good volume.



Case I. Ruptured gall bladder, showing stone in the cystic duct and an applicator in the point of perforation.

In the course of a few hours it was necessary to lower the head of the bed, on account of the effect it had on the pulse. (We have been forced to abandon the use of the Fowler position on several occasions where the patient's heart would not stand this extra work.)

He progressed very satisfactorily for twenty-four hours, when there was some vomiting of regurgitated bile, but as soon as the head of the bed was elevated again this was relieved.

On the second day there was considerable drainage of bile, the ligature had evidently cut through the cystic duct, which was very friable at the time of operation. This continued to drain freely, but the patient would vomit some bile about once or twice a day and this did not improve much until the drain was removed at the end of two weeks, when the gauze wick was found to be saturated with a hard material from the bile, being practically a long gallstone and pressing on the duodenum and causing the irritation; this was replaced by a small rubber tube, but this also proved to be a source of irritation and not until this was left out did we relieve our patient of all vomiting.

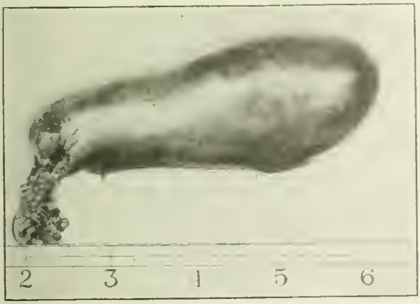
The urine contained a considerable amount of bile for about a week. Ten days after operation it showed a trace of albumin; no sugar; specific gravity, 1.028; numerous small hyaline and granular casts; no acetone.

He continues to gain strength steadily and has not had any regurgitant vomiting since the drains were removed from the region of the pylorus, and all drainage of bile has ceased.

CASE II. LOBAR PNEUMONIA; EMPYEMA; THORACTOMY; RUPTURE OF THE GALL BLADDER; DEATH; AUTOPSY.

Mr. J. L., age sixteen, was referred to me by Dr. T. D. Parke, Feb. 2, 1908, for resection of a rib to relieve an empyema, following a lobar pneumonia of the right lung, which he had contracted about two weeks previous to this time. He was convalescent when he began to have pain in the chest again, with an irregular temperature, and, upon aspirating the chest, Dr. Parke found pus.

Under ether, I excised a portion of the seventh rib in the posterior axillary line and found the lung adherent to the diaphragm; a double tube was sutured into the wound, after evacuating a few ounces of thick pus.



Case II. Large perforated gall bladder showing the perforation just above the beginning of the duct, which has been closed with fine sutures.

He seemed to be making a good recovery for four days and was running practically a normal temperature, when he became restless and complained of some soreness in the lower part of the chest; his temperature ran up to 100° F. and pulse 96–100; there was practically no change in his condition for the next twenty-four hours, except that he vomited once; the second day Dr. Parke saw him with me, and after making a careful examination we came to the conclusion that the drainage was imperfect; I removed the tubes and reintroduced them and elevated the head of the bed to overcome this. We suspected there might be an abscess of the lung or liver or a pneumonia of the the other lung developing, but there was absolutely nothing pointing to a gall bladder condition; I had percussed the liver several times daily and there was no special tenderness that could be differentiated from symptoms produced by the adhesions on the lung side of the diaphragm; there was some rigidity of the abdominal muscle, but not marked; the bowels moved freely and were not distended; the nausea continued, but was thought to be due to an acute dilatation of the stomach, which had developed; practically the only distention was seen where the stomach could be plainly outlined; this condition was relieved some by lavage. He grew rapidly worse, with a temperature from 104° to 105° F., pulse 120 to 140, with very poor volume, and died from a general peritonitis, four and a half days after perforation. The leakage was evidently gradual as shown by the temperature for the first two days.

Only a partial post-mortem was allowed; the chest drainage was good, but on opening the abdomen and passing the hand down under the liver I found what I supposed to be a ruptured abscess of the liver, but what proved to be an accumulation of pus around the neck of the gall bladder, which was almost gangrenous just above the beginning of the cystic duct and had evidently been leaking at this point and was partially closed by adhesions; the gall bladder was filled with a black tarry material and showed an infection with the colon bacillus; it measured nearly 6 in. in length.

On questioning his brother closely, after making the post-mortem, I found that he had complained of some pain over the region of the gall bladder, at times; he was doing clerical work in this brother's office and as it had not interfered with his work, was evidently forgotten until I called his attention to the findings at the autopsy.

CASE III. PERFORATING GASTRIC ULCER; CLOSED BY SUTURING; NO-LOOP GASTRO-ENTEROSTOMY; RECOVERY.

I saw this case with Dr. Thos. D. Parke, on Jan. 5, 1908, about an hour after perforation. Giving the following history: She had eaten a hearty meal about eight hours previously and had been out during the afternoon for a walk of two or three miles and came home feeling better than usual; during the evening some one came in with a dress-suit case filled with books, weighing about 50 lb., and she lifted it up from the floor to test her strength and immediately felt some unusual soreness in the region of the pylorus and went back to the library and "curled up" in a Morris chair; in about ten minutes she felt a sudden sharp pain instead of the soreness which she first experienced, vomited and had severe rigors; the pain continued, but was somewhat relieved by morphia.

The vomitus contained no blood and consisted of the meal taken eight hours previously, in an undigested state.

When I saw her, her pulse was 96 and temperature normal; there was marked tenderness and pain over the epigastrium, with considerable rigidity of the recti.

From this and the following history I made a diagnosis of perforating gastric ulcer at or near the pylorus and advised immediate operation.

The following is the history previous to perforation:

Mrs. K., age twenty-nine, states that she has had digestive trouble since she was twelve years of age and at times had severe pain in epigastrium; always had ulcers in her mouth. Between the age of fourteen and eighteen, while away from home at boarding school, she had very little digestive trouble. Menstruation has always been normal; she has been married seven years; has three children, eldest six and the last confinement occurred seven months ago; she has not been well since this time.

She had some digestive trouble after the birth of the first child, ulcers in the mouth and pain in the epigastrium.

For the past three months her digestion has been poorer than ever before; she has again had large ulcers in her mouth; sour condition of the stomach and had been taking soda to relieve it; there has been considerable distention with gas; pain from one to three hours after meals and worse in the evenings after dinner; no vomiting; there has been a continuous soreness and she has not been able to wear her corsets for about two months; constipated; has lost about 10 lb. in weight.

Two hours after perforation her pulse was 120 and a blood count made after being placed on the operating table, three and a half hours after perforation, showed 15,000 leucocytes, and another made twenty-four hours later showed 9,500.

Under ether, an incision was made in the median line, extending about an inch below the navel; as soon as the peritoneum was opened the contents of the stomach were ejected through the wound, the perforation coming into view immediately; it was a round ulcer, punched out, about the size of a lead pencil, and was located just over the pylorus; the tissues around the ulcer were very much indurated for half an inch or more and when I introduced the first sutures to close the ulcer they cut out; I put in three rows of linen before getting beyond the indurated area and this narrowed the pylorus so much that I decided to do a no-loop gastro-enterostomy. This prolonged the operation about forty minutes, but the patient left the table in good condition. A drain was passed down beneath the liver and another through a stab above the pubis, after flushing the abdomen with hot salt solution.

There was considerable drainage for several days, a modified Fowler position being used. She was badly constipated at the time of the operation and high enemas did not seem to relieve the condition much, and on the third day her pulse became rather irregular and she showed that there was an auto-intoxication, being drowsy and rather stupid; the urine showed a trace of albumin and a few narrow granular casts; this all cleared up as soon as the bowels were moved.

Sterile water was given by mouth on the second day and salt solution was begun by enema just after the operation and was kept up until we felt safe in allowing her to drink freely. No food was given by mouth until the fifth day, on account of the constipated condition of the bowels and then only such foods as had been sterilized by heat.

Her temperature did not go above 99° F. and her recovery was rapid and uncomplicated. She is perfectly well now, seven weeks after operation, goes to the theater and automobile riding and has been completely relieved of the indigestion and sore mouth and scarcely restricts her diet at all.

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Reports of Societies.

NEW ENGLAND PEDIATRIC SOCIETY.

At a meeting held May 9, 1908, Dr. Charles W. Townsend read a paper on

THE ABUSE OF ALCOHOL IN THE TREATMENT OF CHILDREN'S DISEASES.

DISCUSSION.

Dr. J. L. Morse: I subscribe most heartily to what Dr. Townsend has said, and feel with him that there is no drug which is at present more misused in the treatment of babies and children than alcohol. I feel sure that in the gastro-intestinal disorders it does nothing but harm, and that it keeps up the irritation of the stomach and retards recovery. I think that alcohol is very often used with the idea of stimulating the child and restoring its circulation, when what is really needed is external heat. If heaters are used freely in such cases, alcohol is not needed. In the same way, alcohol is given when children are cyanosed. Here again, fresh air and heat will do much better than alcohol. I hardly agree that babies do not like alcohol. It has seemed to me that babies take to it naturally. Older children, perhaps, do not like it as well. There is one class of cases, however, in which it seems to me that alcohol is of use, and that is in the septic conditions, of which diphtheria is an especially good example.

Dr. R. W. Hastings: I want to say a word right on the line of what Dr. Morse has said last. I learned to use alcohol on just those cases of diphtheria which he has mentioned. To me sepsis always calls for alcohol. But one encounters sepsis a good many times in gastro-enteric diseases and in ever so many cases of pneumonia. I am accustomed to use alcohol in these cases. I grant that there is a certain amount of irritation to the child's stomach by introducing brandy and whiskey. I do not know that I have followed anywhere near the same number of cases that Dr. Morse and Dr. Townsend have, but still I have seen a pretty large number. Practically always, where there was a septic condition, where it seemed to me that there was an active infection, exactly what we get in the infection which so frequently accompanies diphtheria, and which occurs as well many times in bronchopneumonia, it has seemed to me that alcohol in the shape of brandy or whiskey does help a good deal. During the last four or five months, for instance, I have seen something like forty-five cases of pneumonia, bronchopneumonia, that occurred in little children under two or three years, several of them only a few months old. They all got much the same treatment, including regulation of diet, a few drops of brandy, 10 or 20, never more than 20, every two hours, and a dose of strychnia, gr. 1-500 up to 1-200, in some cases every four hours. The mortality of these forty-five cases was 4, not a bad record for institutional cases. I should be afraid to drop the alcohol. Personally, I feel every time like making a protest about giving up the sheet-anchor that so many of us have used for years and which our predecessors have used for years in septic cases. Perhaps Dr. Townsend and Dr. Morse are in the right here, but I am not yet ready to follow their lead.

Dr. E. D. Chesebro: I am reminded of a case of pneumonia in a middle-aged woman whom I saw about twenty years ago. At the end of two or three days she seemed very sick, and the family, as well as the attending physician, became very anxious. A consulting physician was called in, an elderly man. He asked me if I was giving her any alcohol. I told him I was giving her a little. "You must push the alcohol," he said. I proceeded to push the alcohol. The next day I was discharged. A homeopathic physician, an elderly man, was called in. He stopped all medicine, so far as we could learn, and the patient proceeded to get well. Influenced by the lesson taught by the case, I have never from that day to this used it as a routine treatment in any disease. It seems to me that it is indicated in certain septic cases, whether they be pneumonic or gastro-enteric, where a very definite poison is having a definite depressing influence on the heart, but as a matter of fact I use very little alcohol.

Dr. F. P. Denny: The question is whether alcohol increases or decreases the resistance of the body to infection, whether it favors or retards the formation of protective substances in the patient's blood. There is very little experimental proof that alcohol increases the resistance to infection, but that it decreases the resistance in many cases I think there is considerable evidence, especially when given in large doses. In some infections very small doses of alcohol increase the susceptibility; for example, in gonococcus infections. We used to give alcohol a good deal when I was an interne at the hospital. In cases in which the pulse was not very good we would increase the amount of alcohol, and then come round in an hour or two and find that the pulse was more easily felt, and conclude that the patient was better. There was no evidence, however, that the resistance of the patient was increased. Since those days I think I have been using alcohol less and less. It seems to me that there is little proof, even in septic cases, that alcohol increases the resistance of the patient.

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AMERICAN NEUROLOGICAL ASSOCIATION.

THE 34TH ANNUAL MEETING.

(Concluded from No. 4, p. 117.)

HYSTERICAL INSANITY WITH REPORT OF SOME ILLUSTRATIVE CASES.

DISCUSSION.

Dr. Charles L. Dana, New York, said that he had read a great many articles on hysteria and that every writer had a different conception of it, so that the subject is very puzzling. We could get along much better if the term hysteria was dropped entirely. He did not think we would ever get a clear idea of psychoses so long as we try to establish an hysterical psychosis. He did not say this in criticism of Dr. Diller's paper, which he thought very timely. He said he would like to hear some clear-cut description of this psychosis. He had never seen any clear-cut picture which he could qualify as belonging to this group, although he had seen hysteria combined with some form of insanity.

Dr. Henry R. Stedman, Boston, said that if there was such a thing as hysterical psychosis, it must be based on physical stigmata. He had met with very few cases of that type and thought the term hysterical insanity was disappearing from our nomenclature.

Dr. Diller, in closing said that it is very hard to define insanity and that he is unable to define hysteria. He thought hysterical insanity was hysteria which presents such profound, prolonged exaggerated mental symptoms as to constitute the person in the ordinary practical way an insane person.

Adjourned 5.15 P.M.

MORNING SESSION, THURSDAY, MAY 21.

Dr. C. W. Burr, President, in the chair.

Dr. Herman H. Hoppe, Cincinnati, read a paper entitled,

LOCALIZED EPILEPTIC CONVULSIONS WITHOUT GROSS LESIONS OF THE CORTEX OF THE BRAIN.

Hoppe confined his remarks to cases showing genuine epileptic convulsions and not those of the Jacksonian or reflex type. Only cases in which the physical examination was negative were selected. In one class of cases there develops, without previous epilepsy, a status hemi-epilepticus which results fatally in a short time. In these cases operation is futile. It is often difficult, even after prolonged observation, to decide whether a given case of localized epileptic seizure is due to an organic lesion or not as there are so many forms of trauma and disease which may cause an organic lesion. We must, however, conclude that these are cases which are not produced by organic lesion. When the loss of consciousness occurs first and the convulsion follows and is limited to a small group of muscles it is undoubtedly epileptic and not Jacksonian. There is a second class of cases in which attacks recur for years and in which there is no progression. The attacks always occur in the same way. In Jacksonian epilepsy there is steady progression. Differentiation must also be made from hysterical epilepsy.

DISCUSSION.

Dr. L. Pierce Clark, New York, stated that he, in a series of 11 cases of status hemi-epilepticus at the Craig Colony, had only 1 death. It is not uncommon for cases of this type to go through attacks fifteen times or more. He had looked over the cases Dr. Hoppe mentioned and thought they were not without suspicion of organic lesion. He thought that the underlying lesion in focal epilepsy was a chronic meningo-encephalitis.

Dr. E. E. Southward, Boston, thought the possibility of a bacterial etiology should be looked into in these cases.

Dr. W. G. Spiller, Philadelphia, thought that in cases of doubt as to the presence of an organic lesion operation should be done early, even if it turns out to be only exploratory for, in case of tumor, success can be assured only by early operation.

Dr. B. Sachs, New York, stated that many cases of epilepsy were due to a lesion sustained early in life. That there is some change, either microscopic or macroscopic, we must maintain until there is very strong evidence to the contrary. In a case in which focal epilepsy comes on suddenly in one who has never had epilepsy before the idea of operation might well be entertained.

Dr. J. J. Putnam said that in these cases, while there was no local lesion, there was an area of maximum irritability.

Dr. F. X. Dercum, Philadelphia, stated that in a disease so hopeless as epilepsy, operation should be done if there was only a shadow of a chance of its doing good.

Dr. C. K. Mills thought the further the question of operation was studied the greater the success. A species of Jacksonian epilepsy sometimes occurs inside the general epileptic attack, and when this is the case, operation is indicated.

Dr. Hoppe, in closing, said he agreed that microscopic changes could perhaps be found in all cases of so-called idiopathic epilepsy. He believed in operation in the cases Dr. Spiller spoke of, but his cases were not of that kind.

Dr. Theodore H. Kellogg, New York, read a paper entited,

SANE PROTOTYPES OF INSANE MENTAL PROCESSES.

Dr. Kellogg said that insanity is never a spontaneous mental variation but is always evolved on persistent lines of mental action. All insane mental processes have their correlative sane prototypes which have not been adequately studied. He compared the insane mental processes with their sane prototypes in the following order, viz.:

Delusions of the sane as the casual prototypes of the false beliefs of the insane; extremes of conduct of the insane as uniformly modeled after sane exemplars; insane emotions, propensities and impulses as directly derived from their sane prototypes; the hallucinations and illusions of the insane as a mere projection of the prototypic sensorial disorders of sanity.

DISCUSSION.

Dr. H. R. Stedman, Boston, said that the only mental conditions it seemed hard to trace were the perversions of instinct, such as sexual perversions and the eating and drinking of loathsome things.

Dr. Carl D. Camp, Ann Arbor, Mich., read a paper entitled,

THE COURSE OF SENSORY IMPULSES IN THE SPINAL CORD.

Dr. Camp said that other sensations than pain and temperature, as first taught by Van Gehuchten are conveyed in the spinal cord by fibers which take their course in different parts of the cord.

Pain sensation enters the posterior horn by the posterior root and ascends in the gray matter for variable distance varying from 2 to 8 segments, crosses in the posterior commissure, and ascends in Gowers's tract to the cerebrum either directly or indirectly. Heat and cold enter by the posterior roots and follow the same course as pain, but by distinct and separate fibers. Tactile sensation enters by the posterior roots and passes up in the posterior columns on the same side without decussation.

The sense of position comes from the joints; of motion from the muscles. They enter by the posterior horn, run to the cells in Clark's column, possibly ascend in the gray matter of same side for a number of segments, then up in the direct cerebellar tract of the same side.

DR. L. PIERCE CLARK, New York, read a paper entitled,

A CONTRIBUTION TO THE DIAGNOSIS OF EPILEPSY AND DEMENTIA PRECOX.

Dr. Clark stated that epilepsy has a characteristic voice defect, which he demonstrated by charts showing the melody plot as compared with the normal. He also said a study of changes in the eyes reveal the toxemic character of dementia precox.

DR. WILLIAM G. SPILLER read a paper entitled,

THE SYMPTOM-COMPLEX OF OCCLUSION OF THE POSTERIOR INFERIOR CEREBELLAR ARTERY: TWO CASES WITH NECROPSY.

Dr. Spiller said that the symptom complex of occlusion of the posterior inferior cerebellar artery is as follows: Sudden onset, usually without disturbance of consciousness. Motor power in the limbs and fifth nerve distribution not affected, or at most temporary and slight weakness of the limbs of the side opposite the lesion. Diminution or loss of pain and temperature sensations in the limbs of the side opposite the lesion, and in the fifth nerve distribution on the side of the lesion, or also, in the side of the face opposite the lesion; the disturbance of sensation in the face may be only in the first, or first and second branches, or in the whole distribution of the nerve, depending on the upper level of the lesion. Subjective pain, or some form of paresthesia in the area of disturbed objective sensation. Tactile sensation usually intact in all parts. Sense of position usually intact but sometimes affected. Occasionally a zone of intact sensation in the neck between the zone of disturbed sensation in the limbs of one side and the face of the opposite side. Ataxia in the limbs on the side of the lesion indicating that the fibers of co-ordination do not decussate below the medulla oblongata. Tendency to fall forward on the side of the lesion; tendency for the head to drop.

Nystagmus bilateral, more intense when the eyes are directed toward the side of the lesion. Meniere's symptom-complex; vertigo, revolving vertigo, auditory hallucinations, vomiting, intense headache occasionally. Disturbance of micturition occasionally. Paralysis of the muscles of deglutition on the side of the lesion (vagus) but causing complete inability to swallow, with impaired sensation of the pharynx. Paralysis of the soft palate on the side of the lesion. Paralysis of the larynx on the side of the lesion; voice hoarse and speaking is in a whisper (loss of phonation with preservation of articulation). Tongue possibly a little weak on the side of the lesion, but the weakness usually not persistent, as the hypoglossus nerve and nucleus usually escape. Taste lost in anterior two thirds of tongue occasionally. Paresis of the sixth nerve on the side of the lesion occasionally. Paresis of the facial nerve on the side of the lesion occasionally. The paresis of the sixth and seventh nerves is often absent in a lesion confined to the posterior inferior cerebellar artery, and possibly it may be caused by further extension of the area of softening. Sympathetic disturbance; smallness of pupil, narrowing of palpebral fissure, retraction of the eyeball, on the side of the lesion. Loss of sweating on the face on the side of lesion occasionally, or increase of sweating in the face on the side opposite the lesion, occasionally. Obstinate hiccough. Hemiasynergy on the side of the lesion. Pulse may be rapid from paralysis of the vagus. Loss of tendon reflexes, including the patellar tendon reflex, or, in other cases, exaggeration of the tendon reflexes.

DR. HENRY M. THOMAS, Baltimore, read a paper entitled,

THROMBOSIS OF POSTERIOR INFERIOR CEREBELLAR ARTERY WITH AUTOPSY REVEALING THE LESION IN THE MEDULLA.

Dr. Thomas made further reference to two cases reported in 1896, the second of which died two and a half years after the onset, but autopsy was refused. A third case was a man of fifty-nine who, a week before entering the hospital, had intense giddiness, pain in left side of face, difficulty in talking and swallowing, drooping of left eye, and weakness of left face. Examination showed an extremely ill man, with marked vascular, cardiac and renal involvement. Sensorium dull. Constant hiccough. Left pupil smaller than right. Slight left ptosis. Slight divergent squint of left eye. Dissociated sensory disturbance on left face, right arm and leg. No sweating of left side of face. Death in four days. Autopsy, among much else, revealed thrombosis of left posterior inferior cerebellar artery.

DISCUSSION.

DR. B. SACHS said he had had a case of unquestionable thrombosis of the inferior cerebellar artery a short time ago who has practically recovered.

DR. T. DILLER said he had seen three or four cases such as described in these papers.

DR. CHARLES E. BEEVOR, London, England, said he had not come across any case similar to those described.

DR. D. J. MCCARTHY said it should be borne in mind that there is a wide variation in the posterior branches given off by the circle of Willis, hence the symptoms may differ greatly dependent upon which vessels are involved.

DR. SPILLER, in closing, said the symptom group he described was so striking that if it is kept in mind a diagnosis could be made without difficulty.

DR. THOMAS, in closing, agreed with Dr. Spiller and said that some 30 cases could be collected, both with and without autopsy, showing this sharp cut symptomatology.

AFTERNOON SESSION, THURSDAY, MAY 21.

DR. C. W. BURR in the chair.

DR. J. ARTHUR BOOTH, New York, read a paper entitled,

REPORT OF A CASE OF MYASTHENIA GRAVIS WITH NEGATIVE PATHOLOGICAL FINDINGS.

Booth reported the case of a lad of eleven years who presented the familiar symptom-complex of the disease with a rather acute invasion, following an operation for adenoids. Death from failure of respiratory musculature. Examination of the central nervous system negative and specimens taken from muscles and nerves did not show anything abnormal. Thyroid, parathyroid, and pituitary glands normal. Slight, simple hypertrophy of thymus gland.

DISCUSSION.

DR. N. E. BRILL, New York, said he regarded the enlargement of the thymus in this case as distinctly pathological. Abnormalities of the thymus occur in 20% of the cases of myasthenia gravis.

Dr. W. G. Spiller said he had recently had a case found to be eliminating an excess of calcium chloride in the urine. He was put on calcium chloride with distinct improvement.

Dr. Booth, in closing, said he did not agree with Dr. Brill that the thymus in his case was pathological.

Dr. S. Weir Mitchell, Philadelphia, read a paper entitled,

REST TREATMENT IN RELATION TO PSYCHOTHERAPY.

Dr. Mitchell said that he had evolved the rest treatment in 1874 and in 1876 had written a book on the subject which was soon translated into seven foreign languages. The treatment was not used by others until 1877, when it was administered by Dr. Wm. Goodell. In 1879 it was utilized by Dr. Plairfair in England. He has had no reason to complain of the reception of the method of the treatment by the profession at large, but many unfair criticisms of it have been made by eminent men who ought to know better. The good effects are assigned to various influences, some of which do not even form a part of the method. Dubois has been an especially unfavorable critic of the Weir Mitchell treatment, a fact which grows out of Dubois' failure to properly understand the method. Dr. Mitchell quoted from this critic's writings to show that his strictures are not warranted. Charcot has claimed priority for isolation, but Dr. Mitchell asserted that he was the first to make use of this measure in the lesser neuroses.

The rest treatment is especially adapted to the treatment of neurasthenia, hypochondria and hysteria. Neurasthenia may be and often is a purely physical affection and that psychotherapy would do distinct harm in such cases. Pure hypochondria is a mental disease but it is rare. Absolutely nothing is known of hysteria. He believed the clergyman could often give material aid to the physician. Hardly a week goes by that he does not seek the assistance of the clergyman in the treatment of a case. However, no organic disease could ever be relieved by influence exerted upon the mind. Some conditions, as masturbation, irritable temper and kleptomania, are at times favorably influenced by inflicting bodily pain, and Dr. Mitchell sometimes resorts to this measure. Hypnotism is not largely useful in the treatment of disease.

Dr. Mitchell said the protest of his paper was not against mental treatment but against exaggerated statements of what is to be had from its use. Labels are deceptively alluring and psychotherapy sounds most alluring. The self-importance conferred by the belief of some of the disciples of cults of mind healing that they are in possession of powers which lift them above their fellows is one of the principles which fosters these perilous creeds. There is some such risk even for the educated users of psychic methods.

DISCUSSION.

Dr. F. X. Dercum, Philadelphia, said the rest treatment was certainly original with Dr. Mitchell and that the only remarkable fact about the method was that it made use of simple physiological means. The danger in the newer methods of so-called psychotherapy is that they will be used to the neglect of physiological means.

Dr. J. J. Putnam, Boston, said that the contribution Dr. Mitchell had made to medicine was a great one and as complete as Minerva springing from the head of Jupiter. He thought no small factor in Dr. Mitchell's success was his glorious courage and inspiring personality. He agreed with Dr. Mitchell that neurasthenia is often purely physical in nature.

Dr. Charles L. Dana, New York City, said that Dr. Mitchell's colleagues had never questioned the value of this original contribution to therapeutics. He thought in reference to psychotherapy it was true that a great many people are going to the wrong place, such as Christian Science and the like, for treatment and that physicians should acquire a knowledge of all that is good in the way of treatment by whatever name it is called and be prepared to use it.

Dr. B. Sachs, New York, thought that the association should stand in opposition to the psychotherapy idea as recently developed, because it had been horribly overdone, but that physicians should go along as we have always done exerting our influence as physicians, often perhaps unconsciously, but nevertheless with good effect. He did not think it necessary to coin any new terms.

Dr. Charles E. Beevor, London, England, said he had had in Dr. Mitchell's paper the most delightful treat of his life. He said that in England the Weir Mitchell treatment is used with the greatest success; also that psychotherapy has not yet invaded the shores of England.

Dr. P. C. Knapp, Boston, said he endorsed absolutely everything that Dr. Mitchell had said. The physical condition of the patient is too often overlooked. The most important thing is to put the patient on the best possible physical basis.

Dr. P. C. Knapp, Boston, as chairman of a committee appointed to collect data as to the existence of general paresis and general brain diseases in railway employees, reported that the committee had gone far enough to learn that these diseases are sufficiently prevalent to constitute a grave danger to the traveling public and that it would be desirable to have locomotive engineers and train despatchers examined regularly by competent neurologists.

Dr. E. E. Southard, Boston, read a paper entitled,

THE TYPES OF ENCEPHALITIS.

Dr. Southard considered only the exudative forms of encephalitis which fall into three groups: (1) Acute, including coccal and typhoidal forms; (2) subacute, including tuberculous and luetic forms; (3) the progressive form, or dementia paralytica.

Dr. J. Ramsay Hunt, New York, read a paper entitled,

OCCUPATION NEURITIS OF THE DEEP PALMAR BRANCH OF THE ULNAR NERVE. A WELL-DEFINED CLINICAL TYPE OF OCCUPATION ATROPHY OF THE HAND.

Dr. Hunt said he would isolate a group of occupation palsies of the hand having the following clinical characteristics:

a. Atrophic paralysis of the intrinsic muscles of the hand, supplied by the deep palmar branch of the ulnar nerve. *b.* Reactions of degeneration in the intrinsic muscles of the hand, supplied by the deep palmar branch of the ulnar nerve. *c.* No objective sensory disturbances of the hand or fingers.

They are to be regarded as due to compression neuritis of the deep palmar branch of the ulnar nerve as it passes between the muscles of the hypothenar region on its way to the deeper structures in the palm of the hand.

DISCUSSION.

Dr. F. W. Langdon, Cincinnati, said the association was much indebted to Dr. Hunt for the way in which he had worked out this form of neuritis. He thought there was a tendency to erroneously ascribe this condition to progressive muscular atrophy.

Dr. P. C. Knapp, Boston, said he was very appreciative of Dr. Hunt's careful work and that his explanation was very convincing; also that these cases had often been described as beginning spinal myelopathy.

Dr. Philip Coombs Knapp, Boston, read a paper entitled,

CONFUSIONAL INSANITY AND DEMENTIA PRECOX.

Dr. Knapp stated that too sharp a distinction had been drawn between confusional insanity and dementia precox, so-called, in the endeavor to establish two distinct diseases. The confusion of the former and the stupor of the latter are only two stages of what is really the same disease. One is a disturbance of projection and the other of perception. The pathogenesis of these conditions has not yet received sufficient study. Intoxication and exhaustion play an important rôle. The so-called dementia precox is not always precocious, as it may begin after fifty, neither does dementia always occur. Dementia precox as a term characterizes the disease too strongly as hopeless, for it is not ordinarily progressive and is sometimes curable.

DISCUSSION.

Dr. F. W. Langdon, Cincinnati, said he agreed with the essayist.

Dr. Alfred Gordon said we were too ready to jump at a diagnosis of dementia precox as soon as the patient was found to be a young person.

Dr. G. A. Waterman, Boston, read a paper entitled

FACIAL PARALYSIS.

Dr. Waterman based his paper on 335 cases of peripheral facial palsy. There was very slight difference in the side or sex affected or in the season of the year. However, exposure to cold and drafts plays an undoubted causative rôle; so do also the toxins of syphilis, nephritis and the like. Ear disease also plays a part. The character of pain at the beginning is of no prognostic import.

Dr. William C. Krauss, Buffalo, N. Y., read a paper entitled,

PROGNOSIS OF SPINAL-CORD TUMORS WITH OPERATION.

Dr. Krauss said the first operative case of spinal cord tumor was that of Gowers and Horsley in 1888. There was one series of 50 cases in the first ten years; a second series of 50 in the next five years and a third series of 50 cases in the next five years. The prognosis has gradually grown better and better and is especially good in cysts and sarcoma.

Dr. A. R. Allen, Philadelphia, read a paper entitled,

DELAYED APOPLEXY (SPÄTAPOPLEXIE) WITH REPORT OF A CASE.

Dr. Allen concluded that traumatic delayed apoplexy is an entity; that it may be due to an occlusion of the arteries; that when hemorrhage occurs it is not due to necrosis outside of the artery. The arterial changes are the result of the trauma.

Officers for 1908–1909.

President, Dr. S. Weir Mitchell, Philadelphia; First Vice-President, Dr. Pearce Bailey, New York; Second Vice-President, Dr. F. W. Langdon, Cincinnati; Secretary and Treasurer, Dr. Graeme M. Hammond, New York. Councillors, H. M. Thomas, Baltimore, Charles W. Burr, Philadelphia.

The next meeting will be held in New York, the date to be determined by the Council.

Book Reviews.

Materia Medica for Nurses. By John E. Groff, Ph.G., Professor of Materia Medica in the Rhode Island College of Pharmacy. Fourth revised edition. Rearranged by Lucy C. Ayers, Superintendent of Nurses' Training School, Rhode Island Hospital. Sections on Therapeutics rewritten by Herman C. Pitts, M.D., Gynecological Surgeon, Rhode Island Hospital. Philadelphia: P. Blakiston's Son & Co. 1908.

The fourth edition of this small epitome of materia medica is somewhat changed from previous editions. The text has been revised and the arrangement somewhat changed. The volume remains a useful textbook.

Nutrition and Dysentery. By U. N. Mukerji. M.D. (Edin.), Member of the Royal College of Surgeons, England; Lieutenant Colonel, Indian Medical Service (Retired). S. K. Lahiri & Co.; London agents, Kegan, Paul and Trench. 1905.

This little book of 286 pages contains a discussion of dysentery in India. Observations were especially made upon the prevalence of the disease in Indian prisons. The writer obtained great success with the use of corrosive sublimate. He especially favored keeping the prisoners upon a diet to which they have been accustomed. One half of the volume is made up of a collection of dietary data.

Register of Foods. A Graphic Study of Eatables by the Comparison of the Percentages of Their Principal Chemical Elements. By P. W. Goldsbury, M.D. Boston: Whitcomb & Barrows. 1907.

Dr. Goldsbury has rendered a distinct service to practical dietetics in publishing this chart of food values. Through the arrangement of colors it is possible almost at a glance to determine the relative proportion of mineral matter, water, protein, fat and carbohydrate in all the ordinary articles of food, together with their fuel value expressed in figures. The chart is arranged in such a way that it may be folded, which is an advantage.

Insomnia and Nerve Strain. By Henry S. Upson, M.D. 12mo, pp. xiv, 142. With 17 skiagraphic illustrations. New York and London: G. P. Putnam's Sons. 1908.

This little volume is primarily an attempt to study the sensory phenomena of dental lesions and their influence upon various nervous and mental disorders, especially cases of melancholia, mania and dementia precox. In the study of these dental lesions, great importance is laid upon examination of the teeth and jaws by the x-ray, and many cases are reported of cure of the nervous trouble by removal of the impacted tooth. The neuro-psychoses are regarded as conditions of nerve waste from excessive irritation, usually protopathic, accompanied by phenomena of disordered nerve action. The author attempts to apply Head's divisions of sensibility into epicritic and protopathic to cerebral conditions, but his hypothesis has been weakened by Head's later studies, which show that the division between epicritic and protopathic sensibility is applicable only to the peripheral nervous system. The evidence that serious nervous disorder may be occasioned by dental lesions is of sufficient importance to repay a perusal of the book.

Diseases of the Nervous System. By H. Campbell Thomson, M.D. (Lond.), F.R.C.P. 12 mo, pp. xvi, 480. With 8 colored and 12 black and white plates, and 101 figures in the text. Chicago: W. T. Keener & Co. 1908.

It is no easy task to deal with the whole subject of nervous diseases in so small a space as is afforded by this little volume, and the author is to be congratulated for having succeeded so well. He has furthermore managed to treat of various subjects which have not yet been included in the ordinary textbooks; for example, Head's theories as to epicritic and protopathic sensibility, Marie's views on the aphasia problem, and amyotonia congenita. The only serious omission is the failure to speak of encephalitis, apart from the forms of polioencephalitis described by Strümpell and Wernicke. Although necessarily much condensed, with the omission of much detail, the author gives a clear and concise account of the nervous system and its diseases, which is, in the main, accurate and up-to-date. The chapters on neurasthenia and hysteria, however, do not take sufficient note of the recent investigations on the psychical side of those affections, and especially of the teachings of Janet and Babinski. The sections on treatment suffer somewhat, too, from the effort at condensation. On the whole, however, the book may safely be recommended to the student as an excellent brief manual of the subject.

Adenomyoma of the Uterus. By Thomas Stephen Cullen, Associate Professor of Gynecology in the Johns Hopkins University; Associate in Gynecology in the Johns Hopkins Hospital. Illustrated by Hermann Becker and August Horn. Philadelphia and London: W. B. Saunders Company. 1908.

This is a monograph of 270 pages embodying a report of 73 cases of adenomyoma of the uterus found among 1,283 specimens of myoma examined by Dr. Cullen in the pathological laboratory of the Johns Hopkins Hospital from April 1, 1893, to July 1, 1906. The cases are reported in enough detail and the illustrations are excellent. Adenomyoma is divided into three groups: (1) Adenomyoma in which the uterus preserves a relatively normal contour; (2) subperitoneal or intraligamentary adenomyoma, and (3) submucous adenomyomata. Clinically, Cullen finds the diagnosis of diffuse adenomyoma is relatively easy, for the following reasons: (1) The bleeding is usually confined to the period. (2) There is usually much pain, referred to the uterus, at the period. (3) There is usually no intermenstrual discharge of any kind. (4) The uterine mucosa is perfectly normal and may be rather thick. No other pathological condition of the uterus, as a rule, gives this characteristic picture. No light is thrown on the cause of adenomyoma.

On the Witness Stand. Essays on Psychology and Crime. By Hugo Münsterberg, Professor of Psychology, Harvard University. New York: The McClure Company. 1908.

It is evident from Professor Münsterberg's recent writings that one of his main objects is to render the supposedly theoretical work of the psychological laboratory practical and operative in the usual affairs of life. To this end he has written the book before us, entitled "On the Witness Stand," which is in part familiar to the readers of McClure's Magazine, inasmuch as a number of the articles have already appeared in it. The aim of the book is to attempt the demonstration of the applicability of modern psychological experimental methods to the detection of crime and the improvement of existing means of administering justice. The subjects of these essays are as follows: Illusions, The Memory of the Witness, The Detection of Crime, The Traces of Emotions, Untrue Confessions, Suggestions in Court, Hypnotism and Crime, The Prevention of Crime. The thesis which the writer sets himself to prove is that the psychologist has reached a stage of development when he should be called into court as an expert in the same sense that other recognized experts are called. In other words, he makes a plea for applied psychology, which, however much disagreement it may arouse, cannot be passed thoughtlessly by. The book is interesting and suggestive throughout and unquestionably offers much food for reflection to those who are dealing with crime or other offenses against the law, either from the standpoint of the witness, counsel or judge. The fallaciousness of much of the evidence given, the possibility of self-deception, the power of suggestion and the effects of certain conditions of disease are all matters of the most vital importance which, as Professor Münsterberg maintains, are often overlooked in our ordinary courts of law. Whether the time is yet ripe for an application of the principles advocated is seriously open to doubt. We are still strongly inclined to the opinion that with all its sources of error, the common sense of a jury is, on the whole, the safest guide in the just appreciation of crime, and we say this with complete recognition of the manifest defects of the jury system in the decision of subtle questions either in medicine or law. The book cannot be regarded as conclusive, suggestive as it may be for future investigation in this fascinating and somewhat dangerous field.

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NEW HEALTH LAWS IN NEW YORK STATE.

THE last monthly *Bulletin* of the State Health Department reports that in June a conference, which was attended by the Forest, Fish and Game Commissioner, the superintendent of Marine Fisheries, the president and secretary of the State Department of Health, and Dr. H. D. Pease, director of the State Hygienic Laboratory, was held at Albany in order to plan for the carrying out of certain additions to the Forest, Fish and Game Law which were passed at the last session of the legislature. The first of the new sections of the law provides for the inspection, annually, or oftener if deemed necessary, by the Depart- of Marine Fisheries, of oyster beds and other places from which oysters and other shellfish are taken. The second provides for the services of sanitary inspectors from the Health Department in making such inspections, under the direction of the superintendent of Marine Fisheries. The third prohibits the sale of oysters and other shellfish unless the sanitary condition of such places and product be certified. At a subsequent conference, held in New York, a detailed plan of operation was formulated, and in pursuance of this plan representatives of the State Health Department, including Dr. Pease, visited various points on Great South Bay and Jamaica Bay for the purpose of ascertaining the conditions existing in those centers of oyster production. Subsequent visits will be made to other localities, and, after a general survey of the situation, some central location will be decided upon for the establishment of a branch of the State Hygienic Laboratory. The work of examining the water and the oysters will be pursued with rigor and, in addition, a thorough sanitary survey of the sewerage systems and sewers emptying into the waters of the state adjacent to the oyster beds will be conducted by the Sanitary Engineering Division. While the problem is an extensive one, and will require a large amount of work continued over a period of many months, it is expected that results of great importance, both to oyster growers and consumers, as well as to the inhabitants of the communities bordering on the waters utilized for this industry, will be obtained.

The *Bulletin* also reports an important meeting of the Advisory Board on Tuberculosis of the State Health Department. One of the principal matters discussed was the policy to be pursued by the department in connection with the carrying out of the new laws relating to the registration of cases of tuberculosis, and the procedures and precautions to be taken in the prevention of the disease. The board advised the preparation of a statement containing the two laws and a summary of the important provisions contained in them, together with directions for their enforcement by local health officers and members of the medical profession. This statement is to contain, among other important matters, a new designation of all the diseases which the State Health Department will require to be reported as infectious and contagious or communicable, under the laws of 1908. It will also specify the conditions under which the State Hygienic Laboratory will make a microscopical examination of sputum, in order that local health officers may carry out the provisions now required by law. The board also gave its approval of the general plans of the State Commissioner of Health for the conduct of the campaign for the prevention of tuberculosis, to be conducted in the different parts of the state during the coming season. The principal features of this will be as follows: After the conclusion of the International Congress on Tuberculosis at Washington, Sept. 21 to Oct. 21, the traveling tuberculosis exhibition of the State Health Department, which is to be demonstrated there, will be utilized, in connection with the joint campaign of the department and the State Charities Aid Association, in twelve important cities of the state. In addition, smaller tuberculosis exhibits will be demonstrated in connection with various county fairs. Aside from its joint work with the State Charities Aid Association, the department will conduct, under joint auspices with the county and other local medical societies of the state, a series of special meetings to be devoted to the tuberculosis problem, in connection with which there will be presented a medical tuberculosis exhibition to be collected and organized by the department.

CREMATION.

With regard to sparsely-settled regions, the subject of cremating the human body need not claim much consideration, but under modern living conditions in and about cities, this practice is taking on something more than a sentimental interest. Among the ancients, cremation was very prevalent. In Greece, indeed, there were those whose bodies were denied it — suicides, unteethed children and those struck by lightning. Cremation in the present-day manner seems to have had its inception in Italy in 1866. Gotha has now a large crematorium, in which half a thousand bodies were burned during the ten years ending with 1888. In 1874 the Cremation Society of England was founded, Sir William Thompson having been made its first president. At Woking there were three cremations in 1885; between that year and 1900 there were 1,824. In the recent report of this society, its president, Sir Charles Cameron, informs us that the number of crematory furnaces in England has since increased to thirteen, in which, during 1907, there were burned 705 bodies. The method is evidently growing in that country.

Dr. J. W. Riley, in a most discriminative paper,[1] contrasts cremation with burial. The former affords a clean and rapid disintegration of the human body; burial, on the other hand, is a slow, offensive and dangerous process, especially in regions which are congested to a degree now perhaps unprecedented in history. Besides, every such acre of land is claimed, often ruthlessly enough, for economic purposes. One may see huge factories and tenements immediately adjacent to little cemeteries containing the dead of other and forgotten centuries. There is, indeed, a very real danger to the health of the living near such graves.

Cremation is a legal procedure in England, provided no harm be thereby done others. Does it destroy evidences of crime? This should occur practically not at all. No one may be cremated in England until two independent death certificates have been made by medical men. In cases of doubt, autopsy is provided for, and viscera may, if necessary to caution, be preserved. Besides, Riley points out that except for strychnine and the mineral poisons, little evidence could be procured by exhumation. By far the greater number of such deaths are by other poisons than these. Morphine, aconite, prussic acid, atropine and the like would quickly lose their specific reaction after burial.

With regard to the religious aspects of cremation, Riley believes that in England, at any rate, "there is ample clerical testimony that cremation does not violate divine law," and he reverently points to the saying, "There is a natural body, and there is a spiritual body" in the burial service. In England cremation is confined almost entirely to the wealthy and the intellectual. The society to which we refer has, in the hope of interesting the poor, reduced the membership fee from ten to five pounds. The latter fee would certainly not exceed the cost of a most modest funeral. The main objection among the poor is probably, however, of a religious nature; besides, the poor, for purposes of display, oftentimes spend much more than a right proportion of their means upon funerals.

In this country 13,012 cremations were recorded between the years 1876 and 1900. At quarantine in New York harbor the bodies of immigrants who have died of an infectious disease are, according to the statutes, burned in a furnace on Swinburne Island in the lower bay; but this is not done if the relatives have religious scruples against cremation. In New York, burial is legally prescribed as the ordinary method of disposal of the dead, though cremation is certainly tolerated. Any one, indeed, may direct what is to be done with his own body provided the direction be consistent with propriety and decency. Such is, no doubt, the legal status of the matter in American communities generally.

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FURTHER INVESTIGATION OF POLIOMYELITIS.

In this week's issue of the Journal we publish a careful statistical report of the recent extensive appearance of poliomyelitis in this state, prepared by Dr. R. W. Lovett, under the auspices of the State Board of Health. The gradual recognition of poliomyelitis as presumably an infectious disease, although in very mild degree, has changed the status of the affection, and no doubt will do much toward stimulating research in the problem of its etiology. The State Board of Health has been active in the prosecution of this research, and very properly still feels that much may yet be learned, and that cases which can be adequately observed by physicians should not be neglected because the immediate excitement regarding the appearance of the disease has subsided. In view of these facts Dr. Charles Harrington, secretary of the Massachusetts Board of Health, has sent out the following circular addressed to the medical profession:

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[1] Cremation. Brit. Med. Jour., Dec. 21, 1907.

"It is intended to continue the investigation of the etiology and distribution of infantile paralysis, which already has yielded facts which justify its undertaking, and your co-operation is earnestly requested. Of great importance in the search for the exciting cause of the disease is the bacteriological study of the stools during the febrile disturbance which nearly always ushers in the attack, and you will render valuable assistance and confer a great favor if you will notify this office immediately by telephone (Haymarket 2700), reversing the charge if any, or by telegraph ("Collect"), whenever an acute case is discovered, in order that a sterile container may be sent to you at once for a specimen of the feces, to be forwarded to the laboratory by express, at the Board's expense.

"As certain clinical facts are of much importance, blanks for reports will be sent to you, if you will kindly notify the Board of all cases already observed since January 1, or which may occur during the remainder of the year."

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MEDICAL NOTES.

Lead in the Manufacture of Pottery. — According to *Science*, a committee on the use of lead in the manufacture of earthenware and china has been appointed by the British home secretary. The committee is to consider the dangers attendant on the use of lead in pottery, and to report how far these can be obviated by improved appliances and methods in lead processes by the limitation of the use of lead, by the substitution of harmless compounds for raw lead, or of other materials for lead, and by other means. The committee is also instructed to consider the danger and injury to health arising from dust or other causes in the manufacture of pottery, and the special rules regulating the decoration of earthenware and china.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, July 28, 1908, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 45, scarlatina 31, typhoid fever 37, measles 32, smallpox 0, tuberculosis 52, cerebrospinal meningitis 0.

The death-rate of the reported deaths for the week ending July 28, 1908, was 19.55.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, July 25, 1908, was 227, against 173 the corresponding week of last year, showing an increase of 54 deaths and making the death-rate for the week 19.13. Of this number 121 were males and 106 were females; 224 were white and 3 colored; 160 were born in the United States, 59 in foreign countries and 8 unknown; 48 were of American parentage, 143 of foreign parentage and 36 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 53 cases and 5 deaths; scarlatina, 29 cases and 1 death; typhoid fever, 33 cases and 4 deaths; measles, 55 cases and 2 deaths; tuberculosis, 49 cases and 22 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 15, whooping cough 3, heart disease 19, bronchitis 2 and marasmus 11. There were 15 deaths from violent causes. The number of children who died under one year was 88; the number under five years 103. The number of persons who died over sixty years of age was 36. The deaths in public institutions were 97.

Cerebrospinal meningitis, 2 cases.

Maine Medical Association. — The officers for the ensuing year of the Maine Medical Association are: President, Alfred D. Sawyer, M.D., Fort Fairfield; Secretary, W. Bean Moulton, M.D., Portland.

Circular Concerning Diseases Dangerous to the Public Health. — The Massachusetts State Board of Health makes the following statement:

The law relative to giving notice of cases of diseases dangerous to the public health has been so amended that householders and physicians must now give immediate notice to the local board of health of all cases of actinomycosis, Asiatic cholera, cerebrospinal meningitis, diphtheria, glanders, leprosy, malignant pustule, measles, scarlet fever, smallpox, tetanus, trichinosis, tuberculosis, typhoid fever, typhus fever, varicella, whooping cough, yellow fever, and the said cases must be reported by the board of health, with names and addresses of patients, to the State Board of Health within twenty-four hours.

Meeting of Dental Associations. — A series of meetings of various dental associations was held in Boston during last week and has been continued into this week. The societies represented are, the National Association of Dental Examiners, the National Association of Dental Faculties and the National Dental Association. Together, these three societies constitute the International

Dental Fraternity of the United States and Canada. A great variety of subjects looking toward the development of dentistry and its affiliation with other departments of science have been discussed. Such meetings as these cannot fail to be of value in bringing into closer relation the various dental faculties, in elevating the standard of the profession and in demonstrating the close relationship existing between dentistry and medicine.

NEW YORK.

Opening of the "Caroline Rest." — The "Caroline Rest," the gift of George F. Schrader, a New York manufacturer, to the New York Association for Improving the Condition of the Poor, was opened at Hartsdale, Westchester County, on July 25. It consists of two buildings, with pleasant country surroundings; one a clubhouse where New York nurses and social workers, by paying a small charge, may spend a holiday at any season of the year, and the other a convalescent home for mothers, and in the two there are accommodations for about one hundred. The institution represents an outlay of $100,000.

Raising of Standard, College of Medicine, Syracuse University. — Commencing in 1909, students entering the College of Medicine of Syracuse University must have satisfactorily completed one full year, and on and after October, 1910, two full years, in a science or arts course in a college recognized by the regents of the state of New York, and in that course and in their preparation for it a competent course in physics, chemistry, Latin, one modern language and biology must be included. The equivalent of this requirement, that is, evidence of having passed college examinations for admission to the sophomore or junior class in a recognized college by a student possessed of a medical student certificate from the State Department, will be accepted.

Playground Association of America. — The second congress under the auspices of the Playground Association of America, of which Dr. Luther Halsey Gulick, director of physical exercise in the New York public schools, is president, will be held in New York the second week of September. Addresses will be made by educators, philanthropists and representatives of health boards and other municipal officials, and there will be a great play festival in Central Park for the school children, designed to demonstrate the value of the work and the interest the children take in it. The field representative of the association, has just returned from a tour through thirty-two states, and reports that there are at present public playgrounds in 66 cities, while 152 others have the establishment of these under consideration. Much interest was manifested in the matter in all the cities visited, and the eagerness to receive the information and suggestions he was able to give was most encouraging.

Northern New York Health Officials Association. — A society to be known as the Northern New York Health Officials Association has been organized with the following officers: President, Dr. J. H. Durham, of Cape Vincent, Jefferson County; First Vice-President, Dr. S. H. Russell, of Fulton, Oswego County; Second Vice-President, Dr. H. A. Bassett of Lowville, Lewis County; Third Vice-President, Dr. B. W. Severance, of Gouverneur, St. Lawrence County; Secretary, Dr. A. L. Morgan, of Dexter, Jefferson County. It is to hold quarterly meetings, and all members of boards of health and all health officials in the territory covered by the society are eligible to membership. The objects of the association are educational: (1) That the members may be more thoroughly instructed in sanitary science; (2) to acquire a more perfect understanding of the health laws of the state; and (3) to gain a clear conception of the powers, duties and responsibilities of health officials, and also such officers as citizens. This society was organized at the suggestion of Dr. Durham, of Jefferson County, and it is probable that similar societies will be formed in other parts of the state.

Current Literature.

Medical Record.

June 6, 1908.

1. Burrell, H. L. *A New Duty of the Medical Profession: the Education of the Public in Scientific Medicine.*
2. *Crile, G. W. *The Cancer Problem.*
3. Dannreuther, W. T. *Comments Upon an Unusual Case Requiring Cesarean Section.*
4. Harbin, W. P. *A Report of Three Cases Operated upon for Large Abdominal Tumors.*
5. Duncan, C. H. *The Art of Surgical Knot Tying.*
6. Blain, A. W., Jr. *Urticaria Following the Second Administration of Antitoxin.*
7. Worster, W. P. *The Convalescent Period and Its Successful Management.*

2. See review, Boston Medical and Surgical Journal, July 16, 1908.

June 13, 1908.

1. Huber, J. B. *The Winning Fight against Consumption.*
2. Goldwater, S. S. *The Unfinished Business of General Hospitals.*
3. *Carter, H. S. *Recurrent Vomiting.*
4. Vandegrift, G. W. *The New School Hygiene.*

5. North, C. E. *A Preliminary Note on the Disinfection of Body Cavities by Injections of Suspensions of Living Non-Pathogenic Bacteria.*

3. Carter discusses the theories of origin and treatment of recurrent vomiting. He sums up the causes of this condition under five heads: (1) A pure neurosis; (2) a toxic neurosis; (3) an acidosis from a vicious metabolism principally in the digestion of fats, with or without atolysis; (4) a toxicosis from intestinal putrefaction of proteids when accompanied by a suboxidative power of the body cells; (5) a rheumatic diathesis. As to treatment: under (1) baths, exercises and general hygiene; if a toxemia, an acidosis demands alkalies, a poisoning by the phenol group demands purging. If suboxidation is at the bottom of the trouble in association with intestinal toxins, he suggests the use of thyroid extract for trial on theoretical grounds. Constipation occurs in most of the cases and should be guarded against by all available means. Certain cases do well on small doses of sodium bicarbonate or other alkalies in small doses given frequently; and in all, restriction of proteid and carbohydrate food, making up for their loss by an abundance of fats, in the form of cream, fresh butter, fat meat, etc., gives good results. As to the attack, after the initial cathartic, the indications are to supply fluid to the tissues in large amounts, to dilute the poison, by mouth, high colonic injections, hypodermically, or intravenously. He cites the work of Valenti, in cocainizing the pharynx to prevent vomiting. For feeding, where rectal feeding is indicated, he recommends "fully" peptonized milk (two to three hours) in small amounts, which is shown by Chittenden to be the best substance to keep up nitrogenous equilibrium.

June 20, 1908.

1. *Seibert, A. *Milk-Free Fluid Diet, and Rectal Irrigations in Typhoid Fever. A Further Report.*
2. *Strong, C J. *A Milk-Free Diet in Typhoid Fever.*
3. *Kemp, R. C. *Remarks on Milk-Free Diet and Rectal Irrigations in Typhoid Fever.*
4. Wellman, F. C. *Clinical Charts of a Case of Quartan Malarial Fever Observed in West Africa with Commentary.*
5. Stowell, W. L. *The Relation of Tuberculous Cows to Tuberculosis in Children.*
6. Richards, W. M. *The Treatment of Diseases Due to Respiratory Catarrh.*
7. Goldstone, K. H. *The Injurious Habits and Practices of Childhood: Their Detection and Correction.*

1, 2, 3. Seibert, Strong and Kemp report on their result with milk-free diet in typhoid. They are convinced that its use shortens the stage of fever; that tympanites is not nearly as frequent nor as troublesome, and that nausea, headache, delirium, insomnia and diarrhea will clear up in a very few days if the diet is strictly enforced.

June 27, 1908.

1. *Gorgas, W. C. *Method of the Spread of Yellow Fever.*
2. Van Fleet, F. *An Intradural Tumor of the Optic Nerve, Removed by the Kronlein Method.*
3. Stiles, G. W. *Influenza: Its Diagnosis from a Morphological Standpoint in Stained Specimens of Sputum.*
4. Bishop, L. F. *Several Cases Illustrating Liver Symptoms in Cardiac Disease.*
5. Riggs, A. F. *Adverse Suggestion.*
6. Goodall, H. S. *The Relation of Pleurisy to Pulmonary Tuberculosis.*

1. Gorgas reviews the work on yellow fever in Havana, and on the Isthmus of Panama. The work consisted in (1) preventing the breeding of stegomyia; (2) destroying the stegomyia that had become infected, and (3) preventing mosquitoes from becoming infected, by caring for the sick, so that they could not be bitten by the insects. Though in these localities, the stegomyia were still present, and though there were still cases of yellow fever and many non-immunes, the disease steadily decreased. His explanation of this decrease in the number of cases, and final disappearance of the disease, lies in the fact that by the work done the number of stegomyia was reduced to a point where the spread of the disease could not take place, — the yellow fever point, as he calls it. No amount of fumigation could kill all the infected stegomyia; but if the sanitary arrangements are such that the stegomyia cannot find suitable places to breed, then, though there may be a few of these insects present, the chance of their spreading the disease is reduced so much that a case of yellow fever may be present without danger of an epidemics [W. B. R.]

New York Medical Journal.

June 20, 1908.

1. *Einhorn, M. *A New Method of Estimating the Permeability of the Pylorus and an Attempt at Testing the Pancreatic Function Directly.*
2. Stout, E. J. *Favus, with Reports of Two Indigenous Cases.*
3. Keppler, C. R. *The Treatment of Infantile Paralysis.*
4. Graef, C. *Some Unusual Cases from the Eye Service of Fordham Hospital.*
5. Huber, F. *Bothriocephalus Latus.*
6. Hirshberg, L. K. *Cholera Infantum.*
7. Herzig, A. J. *A Short Résumé of the Common Conjunctival and Corneal Diseases.*
8. Rosenberg, L. *Cause of Premature Separation of the Placenta.*
9. Le Roy, B. R. *Is Idiopathic Epilepsy with Associated Paralysis Due to the Action of a Germ?*

1. Einhorn uses a small bucket, which is swallowed, with a string attached, 75 cm. long. After three hours the bucket is withdrawn. It is usually full and in the absence of pyloric stenosis contains duodenal contents. The x-ray may reveal the bucket actually in the duodenum.

June 27, 1908.

1. Baldwin, E. R. *Review of Theoretical Considerations and Experimental Work Relative to Opsonins with Observations at the Saranac Laboratory.*
2. Illman, G. M., and Duncan, H. A. *The Opsonic Treatment of Disease.*
3. Moro, E. *The Tuberculin Inunction.*
4. Benedict, A. L. *The Ophthalmic Tuberculin Test.*
5. *Bernart, W. F. *Mercury and Tuberculosis.*
6. Ashford, B. K. *Puerto Rico as a Field for Research in Tropical Medicine.*
7. Ballagi, J. *Acute Syphilitic Nephritis.*
8. *Wodelhause, R. E. *Results Obtained from Use of Diphtheria Antitoxin Refined and Concentrated by Gibson's Method.*

5. Bernart gives his observations on the influence of mercury upon tuberculous cases. All were syphilitic and were being treated with intravenous injections of mercury. He found that the control of the active syphilis seemed also to benefit the tuberculosis. However, in the pulmonary cases, if the treatment was continuously pushed, a few months would show a gradual aggravation of the tuberculosis. Likewise, the pulmonary cases with secondary infections were decidedly benefited at first, but if the treatment was continued the retrogression was rapid. Two cases with tuberculous eye troubles were benefited. The patients with genito-urinary tuberculosis showed no improvement.

8. Wodelhause has used diphtheria antitoxin, refined and concentrated by Gibson's method, in 345 patients, both as a therapeutic and prophylactic measure. He found the following advantages over the old form of antitoxin. It is concentrated to one third of the bulk, and the injection is much less painful and terrifying. There were only 4 cases of urticaria. The therapeutic effect was equal to the old form of antitoxin. [R. I. L.]

The Journal of the American Medical Association.

June 20, 1908.

1. *Mitchell, S. W. *The Treatment by Rest, Seclusion, etc., in Relation to Psychotherapy.*
2. Wilder, W. H. *Co-operative Scientific Investigation.*
3. De Schweinitz, G. E. *Auto-intoxication.*
4. Pynchon, E. *Tonsillectomy in Children under General Anesthesia — a Hospital Operation.*
5. McSwain. *Marriage and Intermarriage of Tuberculous Subjects.*
6. Schwinn, J. *Thymic Asthma, with Report of a Case of Thymectomy and Resection of Enlarged Thyroid in a Child Twenty-three Days Old.*

1. Mitchell compares psychotherapy and the treatment

with rest, isolation, forced feeding, etc., which is generally known as Mitchell's rest treatment. His protest is not against mental treatment, but only against exaggerated statements of what is to be obtained from its use. He still believes that "with the cure of the body, somehow or other, the mind also is cured." He bases his faith on his large experience and the many cases of neurasthenia and allied disorders successfully treated by his method. [R. I. L.]

June 27, 1908.

1. Binnie, J. F. *Hyperemia.*
2. Moore, J. E. *Local Applications in Surgery.*
3. Parker, H. C. *The Calmette Ocular Reaction to Tuberculin.*
4. Ely, L. W. *Colles' Fracture, with a New Theory of Its Mechanism.*

The Journal of Experimental Medicine.

May, 1908.

1. Calkins, G. N. *The So-called Rhythms of Growth-Energy in Mouse Cancer.*
2. Mandelbaum, F. S., and Celler, H. L. *A Contribution to the Pathology of Myasthenia Gravis. Report of a Case with Unusual Form of Thymic Tumor.*
3. *Rous, F. P. *The Effect of Pilocarpine on the Output of Lymphocytes through the Thoracic Duct.*
4. Barker, B. I. *The Enzymes of Fibrin.*
5. Buerger, L., and Oppenheimer, A. *Bone Formation in Sclerotic Arteries.*
6. Nichols, J. L. *Angciomata in Valves of Heart of a Newly Born Child.*
7. *Pike, F. H., Guthrie, C. C., and Stewart, G. N. *Studies in Resuscitation: I. The General Conditions Affecting Resuscitation, and the Resuscitation of the Blood and of the Heart.*
8. *Opie, E. L. *The Effect of Injected Leucocytes upon the Development of a Tuberculous Lesion.*

3. Rous found that the intravenous injection of pilocarpine nitrate caused in dogs a rapid and considerable increase in the output of lymphocytes through the thoracic duct. The corresponding lymphocytosis in the blood is not profound and increased cell output with the lymph will explain a large part, if not all of it. The precise mode of action is as yet undetermined.

7. In their studies on resuscitation the writers find that the proper oxygenation of the blood and a proper blood pressure are indispensable conditions. Defibrinated blood and artificial fluids, as substitutes for blood, are not satisfactory. Resuscitation by direct massage of the heart is the most certain method and often succeeds after extrathoracic massage has failed.

8. A summary of this article appeared in the *Bulletin of the Johns Hopkins Hospital*, April, 1908, and was abstracted under that date. [R. I. L.]

The Lancet.

June 6, 1908.

1. Martin, C. *The Ingleby Lectures on the Dangers and Treatment of Myoma of the Uterus. Lecture I.*
2. *Schäfer, E. A. *The Oliver-Sharpe Lectures on the Present Condition of our Knowledge Regarding the Functions of the Suprarenal Capsules. Lecture II.*
3. Semple, D. *On the Preparation and Use of Antirabic Serum.*
4. Hellier, J. B. *Some Recent Cases of Cesarian Section.*
5. Achert, R. E. *The Protracted Use of Digitalis.*
6. *Morison, B. G. *Suprarenal Hemorrhage in an Infant; Its Relation to Hemophilia.*
7. Montgomery, G. M. *A Case of Indicanuria.*
8. Bisshopp, F. R. B., and Malcolm, J. D. *A Case of Appendix Rupture during an Operation.*
9. Leigh, J. G. *America's Triumph in Panama; Three Years' Medical and Sanitary Record in the Canal Zone.*

2. Schäfer's lecture is a review of the work done on the physiology of the suprarenal gland. Much of our present knowledge of this subject is due to the work of Schäfer and his fellow workers.

6. This is a case of hemorrhage into the suprarenal gland, probably occurring at birth, associated later with purpuric spots in the skin; death on the twentieth day. The writer considers it related to hemophilia, but does not prove his contention.

June 13, 1908.

1. *Eyre, W. H. *Melitensis Septicemia (Malta or Mediterranean Fever).*
2. *Martin, C. *Dangers and Treatment of Myoma of the Uterus.*
3. Wilson, W. J. *Bacteriology of Cerebrospinal Meningitis. Sanitary Science.*
4. Yonge, E. S. *Treatment of Intractable Hay Fever and Paroxysmal Coryza by Resection of the Nasal Nerve.*
5. Morison, A. E. *The Gastroscope.*
6. Cattle, C. H. *A Case in which Occlusion of the Abdominal Aorta Took Place.*
7. Corner, E. M. *Treatment of Gangrene in Strangulation Herniæ.*
8. Durno, L. *Dissecting Aneurysm of the Pulmonary Artery; Patent Ductus Arteriosus; Rupture into the Pericardium.*

1. Eyre, in the first of the Milroy Lectures, describes melitensis septicemia, or as it is more commonly known, Malta or Mediterranean fever, as a specific septicemia, resulting from infection by the micrococcus melitensis, widely distributed throughout the sub-tropics; it runs an acute, sub-acute or chronic course of indefinite duration, lasting months or years, and is characterized by an intermittent fever, with a tendency to repeated relapses, and by such toxic symptoms as neuritis, or metastases such as synovitis and orchitis. He describes the history of this disease, its geographical distribution, the seasonal prevalence and the general sanitary conditions of those localities where it is prevalent.

2. Martin, in his second lecture on the dangers and treatment of myoma of the uterus, first briefly describes the non-surgical treatment and then the indications and contra-indications for operation. He does not advise operation where the tumor is smaller than an orange and is causing no symptoms; where the patients is past the menopause and the tumor is causing no symptoms, and where the patient is gravely ill from some other condition. He describes the vaginal and the abdominal operations with the indications for each, with a brief history of the operation of abdominal hysterectomy. This he has done 73 times with 1 death. [J. B. H.]

Deutsche Medizinische Wochenschrift. No. 22.

May 28, 1908.

1. *Riedel. *The Early Operation for Acute Cholecystitis.*
2. Schultheß. *Sphygmobolometric Investigations on Healthy and Diseased Persons.* (Continuation.)
3. Knapp. *Simulation of Astereognosis.*
4. Lanz. *Prostatectomy in Two Stages under Local Anesthesia.*
5. *Plagemann. *Acute Focal Osteomyelitis Involving the Sacro-Iliac Joints.*
6. Rauenbusch, L. *Remarks on the Treatment of Congenital Pseudarthrosis of the Tibia.*
7. Frankenstein, K. *A Case of Imperforate Hymen.*
8. Lengfellner, K. *A Boot for Flat-Foot.*
9. *Müller, E. *The Use of the Millon Reagent to Distinguish between Tuberculous and Other Pus.*

1. According to Riedel, the post-mortem statistics of the large hospitals place the mortality of gallstone diseases far too low, because the severe cases of cholecystitis are frequently not sent to the hospital, but die at home. The frequency with which he meets with severe and fatal cases of cholecystitis in his surgical practice has led him to carry out early operation in all such cases. In many instances he has operated during the first attack, and has found a very acute inflammation of the gall bladder and even perforation. Such inflammations usually occur in gall bladders in which the cystic duct has become plugged with a stone, and hydrops of the gall bladder with gradual thickening of the walls has taken place. He advocates extirpation of the gall bladder in all cases where it is feasible, and describes in detail his technic. In cholecystitis of moderate severity he recommends waiting until the diagnosis is sure, and then removing the gall bladder.

The operation, however, should be performed only by a skillful surgeon with trained assistants, and by daylight. The early operation of cholecystitis with extirpation of the gall bladder prevents the possibility of later obstruction of the common duct by a stone, perforation into the peritoneal cavity, and other serious complications. It also prevents years of suffering. The operation in Reidel's hands has been without mortality when performed in the interval, and of the severe cases only those have died who presented complications which were necessarily fatal, such as sepsis, thrombosis of the portal vein or aorta.

5. Plagemann's patient, a youth of nineteen, entered the hospital with the symptoms of acute inflammation of the sacro-iliac joint. There was fever and pain referred to the region of the joint, and increased by active motion and by passive flexion or extension of the thigh. There was localized tenderness over the right sacro-iliac joint, and pain on lateral compression of the pelvis. The x-ray was negative. Operation disclosed a focus of osteomyelitis in the iliac bone and partly within the sacro-iliac joint. The removal of the focus resulted in a cure with complete restoration of function.

9. This article is a reply by Müller to Dold's adverse criticism of his method to distinguish tuberculous from other pus. Müller claims that his method is extremely reliable. It is carried out as follows: A few drops of pus are let fall into a porcelain dish containing Millon's reagent. If the pus is tuberculous, a thick, tough film forms on the surface of the liquid, and there is no red color. If, on the other hand, the pus is due to the pyogenic cocci, the film is thin and friable, and on breaking it up and mixing it with the fluid, a red color usually appears. It is important to select only pus that is free from blood, will drop easily, and is not too serous. Several other investigators have confirmed in the main the reliability of this method. [W. T.]

Münchener Medizinische Wochenschrift. No. 19. May 12, 1908.

1. Saengers, A. *Localizing Symptoms in Diffuse Affections of the Brain.*
2. Knapp, A. *Advances in the Diagnosis of Brain Tumors.* (To be concluded.)
3. Erhardt, E. *The Employment of Gum as an Addition to the Anesthetic in Lumbar Anesthesia.*
4. Nieter, A. *The Demonstration of Typhoid Bacilli in the Cerebrospinal Fluid in Typhoid Fever.*
5. *Hecht, A. F. _The Meaning of Soap Stools in Infancy._
6. Grossmann, E. *The Operative Treatment of Herniæ in Childhood.*
7. *Conzen, F. _The Meaning of the Achilles Tendon Reflex._
8. Prowazck, S. *Observations towards the Knowledge of the Pathogenic Micro-organisms, "Chlamydozoa."*
9. Sievers, R. *Experiments and Investigations with the Lumière Three-Color Photography.*
10. Kaefer, N. *The Treatment of Fractures of the Forearm.*
11. Teller, R. *The Treatment of Bed Sores.*
12. Levinger. *Pharyngeal Polyp, Showing a Growth of Hair.*
13. Loening, K., and Stieda, A. *Gastroscopy.*
14. Paull, H. *Stangerotherm, the New Method for Applying Heat.*
15. Hoppe, H. *Geh. Medizinalrat Dr. Baer.* (Obituary.)

5. Hecht has made comparative analyses of soap stools and fatty stools in infants. He finds about the same proportion of fatty acids and neutral fats in both, but the per cent of soaps in the former is about double that of the latter. Soap stools never contain any large amount of mucus, as the presence of mucus prevents fat splitting. The author believes the presence of soap stools indicates a slight but definite chronic disturbance of fat absorption.

7. Conzen has examined the Achilles tendon reflexes of 3,290 patients, mostly neurological cases. He has never found the reflex absent in normal individuals. He believes its absence or increase to be as constant a symptom as the patellar reflex, and it is surely as delicate a test, if not more so, as regards the condition of the nervous system. In tabes, Conzen has found an absence of the Achilles reflex a considerable time before the disappearance of the knee jerk an important point in the early diagnosis of this condition. [R. D.]

No. 20. May 19, 1908.

1. Schridde, H. *The Histogenesis of Myeloid Leukemia.*
2. Starsberg, H. *Critical and Experimental Observations on the Question of the Value of Bier's Hyperemic Treatment in Meningitis.*
3. Pfaundler, M., and Moro, E. *The Hemolytic Complement in Human Milk.*
4. Schöne, C. *Specific Complementary Haptophorous Substances in the Blood Serum of Typhoid Bacilli Carriers.*
5. Kämmerer, H. *Trial of a New Clinical Method of Opsonin Determination.*
6. Emmerich, E. *The Clinical Significance of the Cutaneous and Percutaneous Tuberculin Reaction (according to Von Pirquet and Moro) in the Adult.*
7. Rabinowitsch, M. *The Pathological Anatomy of Recurring Fever.* (Preliminary Communication.)
8. Müller, A. *The Serum Treatment of Puerperal Fever.*
9. v. Zeissl, M. *The Treatment of Acne Rosacea.*
10. Nagel, M. *Nursing and Its Influence on the Development of the Child.*
11. Lenk, H. *The Question of Capacity for Nursing.*
12. Muck, O. *The Clinical Significance of Chronically Inflamed Non-Hypertrophic Tonsillar Tissue.*
13. Kownatzki. *Dystocia from Ventral Fixation. Classic Cesarean Section.*
14. Landmann, P. *A Rare Case of Idiosyncrasy against Fowl Albumin, etc.*
15. Goüneberg, L. *The Treatment of Hemorrhagic Diathesis in the Newborn.*
16. Neuwirth, M. *Tendinitis Ossificans Traumatica.*
17. Bottstein, H. *A Contribution towards Internal Treatment with Arhovin in Acute and Chronic Gonorrhea of the Male.*
18. *Knapp, A. _Advances in the Diagnosis of Brain Tumors._ (Concluded.)

18. Knapp speaks in the warmest praise of exploratory brain puncture for diagnosis in brain tumor. He describes the technic at some length. It is possible in this way not only to localize the tumor, — on what side and how extensive it is and how deep it lies,—but also to diagnose beforehand the nature of the growth. In his experience it is the farthest step in advance in the diagnosis of brain tumor. The x-ray may occasionally give a hint as to the localization of tumors inside the skull, but the result of x-ray examination is usually nil. Sometimes when a tumor is close under the skull, the difference in conductivity for sound (tuning fork) may give a valuable clue as to the position of the tumor. The author has been greatly aided by this method in three cases. The localizing of a cerebral tumor by symptoms alone is notably uncertain and unsatisfactory, as tumors in different parts of the brain simulate each others' symptoms so closely. [R. D.]

Berliner Klinische Wochenschrift. No. 19. May 11, 1908.

1. *Fischer, W. _Acute Yellow Atrophy of the Liver in Syphilis._
2. Störk, O. *Contributions to the Normal Histology of the Suprarenal Capsule.*
3. Ebstein, W. *Remarks on "Palpatory Percussion" (Tast Percussion).*
4. Joachim, G. *An Atypical Case of Disturbance of the Auriculo-Ventricular Impulse in the Cardiac Muscle.*
5. Lagueur, W. *Contribution to the Faulty Metabolism of Gout.*
6. Onodi, O. *Relation between Affections of the Nose and Nasophaynx and Those of the Eye.* (To be concluded.)
7. Fromme, F., and Heynemann, T. *The Hemolytic Power of Streptococci.*
8. Leva, J. *Estimation of the Action of Lactobacillin, etc.*
9. Veil, W. *Sarcoma of the Prostate.* (Conclusion.)
10. Forster, E. *Difficulties in the Diagnosis of Brain Tumors.*

1. Fischer reviews the literature on the relation of acute yellow atrophy of the liver and syphilis, many cases having occurred during the course of an untreated or severe infection with the spirochete. He reports the case of a twenty-two year old man who, six months before, was

infected with syphilis, which was untreated. He developed a typical acute yellow atrophy and died in ten days. Bits of the liver were injected into apes without resulting specific infection. The author believes that the acute yellow atrophy in syphilis is due to a toxin circulating in the blood caused by the spirochete and not by the actual presence of the organisms in the liver. [R. D.]

No. 20. May 18, 1908.

1. Nunokowa, K. *Periosteal Fibrosarcoma of the Left Hip Bone, with Almost Exclusive Metastasis in the Bones.*
2. Meyer, K. *The Substances in the Blood Serum which Encourage Phagocytosis.*
3. Weichardt, W. *New Methods in the Study of Immunity.*
4. Unschuld. *Concerning Diabetes.*
5. Baumann, W. *The Treatment of Basedow's Disease with Antithyreoidin Moebius.*
6. Rosenkranz, E. *The Fulguration Treatment of Cancer.*
7. Fuls, E. *A Method for the Disinfection of Stomach Tubes in Daily Practice.*
8. Onodi, O. *Relation between Affections of the Nose and Nasophorynx and Those of the Eye.* (Concluded.)
9. Marx, H. *Criminal Abortion.* [R. D.]

Archiv für Klinische Chirurgie. Bd. 84. Heft. 3.

1. Bornhaupt, L. *The Abdominal Injuries in the Late Russo-Japanese War.*
2. Becker. *Traumatic Arterio-Venous Aneurysm of the Cerebral Carotid, with Pulsating Exophthalmos.*
3. *Wrede, L. *The Stasis Treatment of Acute Suppuration.* (Conclusion.)
4. *Payr, E. *Experimental Investigations on the Changes in the Stomach Following Embolism and Thrombosis in the Portal System.*
5. Schumann, E. *The Occurrence of Malignant Neoplasms on Skin Exposed to the X-Ray.*
6. *Röpke, W *The Influence of Nephrotomy on the Human Kidney.*
7. Kirchner, A. *Separation of the Tuberosities of the Tibia, of the Tarsal Scaphoid, and of the Os Calcis during Youth.*

3. Wrede reports his experiences in 138 cases of infections of all sorts treated for the most part by the stasis method of Bier. While he admits the value of stasis in some instances, he deplores the over-conservatism which this has led to as regards incision and drainage. A patient with fever and an inflamed, painful area of the body should be so treated that at the next visit he is without pain, and the redness, swelling and fever are distinctly on the wane. Instead of this, one often sees by the newer method, "stasis fever," lasting for days, together with bright red extremity, increase of the local disease process and occasionally new infiltrated areas, abcesses and lymphangitis. An increase of stasis and of inflammation thus do definite harm in many instances. [The article is carefully and exhaustively written and well worth consideration.]

4. Payr finds that in rabbits, guinea-pigs, cats and dogs there can be caused a thrombosis in the omental vessels by either burning, scalding or freezing them. Such thrombi, becoming retrograde emboli, often cause changes in the stomach wall, such as erosions or ulcers. These results, together with others obtained by injecting fatty substances, all cause conditions wholly analogous to those found clinically.

6. In Röpke's article the question as to which method of incision into the kidney causes the least destruction of normal parenchyma is discussed. The usual incision as made at autopsy, placed just behind the equator of the organ, is probably the best. Röpke believes the transverse incision should not be used.

[W. C. Q.]

Bd. 84. Heft. 4.

1. Schaefer, F., Svenson, E., and Osten-Sacken. *The Execution Done by Japanese Firearms in the Manchurian Campaign.*
2. *Ekehorn, G. *The Manner of Growth of Tubercle Bacilli in the Kidney.*
3. *Haecker, R. *Experimental Studies on the Pathology and Surgery of the Heart.*
4. Ewald, P. *The Etiology of Modelung's Deformity.*
5. *Heineke, H. *Ruptures of the Pancreas.*
6. *Fedoroff, S. P. *Suprahyoid Pharyngotomy for Tumors of the Base of the Tongue.*

2. The investigations of Ekehorn emphasize the following points in regard to tuberculosis of the kidney: Bacteria may appear in the urine in quantity, although the case be relatively early, with pathologic changes in the kidney of but small extent. The quantity of bacteria may change from time to time, growing more numerous especially when a new papilla has become involved in the process. If the bacteria are found in clumps or large colonies, they are nearly sure to have origin in the kidney. If the quantity of pus in the urine is large, while the number of bacteria is relatively small, the process in the kidney is most probably of the cavernous type, with sclerotic walls. Less pus signifies less extensive renal involvement, although the bacilli may be still very numerous.

3. Haecker finds the Sauerbruch cabinet of great value in all intrathoracic operations, especially those on the heart. With it one can open the pericardium and lay bare the heart without fear of pneumothorax. Much time is thus saved. The best incision is the intercostal, followed by the use of the rib-spreader of Mikulicz. With increasing collapse of the lung, the bleeding from a heart wound becomes less, while the cardiac wall grows somewhat flabby. Should the pneumothorax continue, however, it interferes seriously with the heart action. By being able to regulate the amount of pneumothorax one is able to control the bleeding and place the stitches more easily. Removal of the pneumothorax decreases the danger of infection of the pleural cavity. While placing stitches in a wound of the heart, the afferent veins should be compressed by the fingers. Only interrupted sutures should be used, either of silk or catgut, and they should not penetrate the endocardium. Various experiments on resection of portions of the heart, section or ligature of valves, etc., are also reported.

5. Heineke discusses 5 cases of operation for ruptured pancreas. When the rupture is in the form of a clean tear an attempt may be made to suture it. Usually, however, this will be found to be a waste of time, or even impossible. Packing should then be employed. In uncomplicated cases treated sufficiently early, the prognosis is fairly hopeful. Cases with pancreatic fistulæ should always receive a diet free from carbohydrates, as this markedly decreases the amount of secretion.

6. Federoff advocates the suprahyoid route in approaching tumors of the oropharynx: there is more room, hemorrhage is less, and fewer important structures are involved than by other methods. [W. C. Q.]

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Obituary.

CARLTON P. FLINT, M.D.

Dr. Carlton P. Flint, of New York, died at Seabright, N. J., early on the morning of July 25, from injuries received a few hours before by being struck by an automobile. He had been seeing a patient in consultation with Dr. W. Gill Wylie, whose summer residence is in the vicinity, and was about to take the train for New York when the accident occurred. Dr. Flint was a native of Massachusetts and thirty-six years of age. He was graduated from the Harvard Medical School in 1896, and later served as surgical interne at the Massachusetts General Hospital. He then took up practice in New York, and was highly esteemed as a rising young surgeon. For a number of years he had been associated with Dr. George E. Brewer, and at the time of his death was an assistant surgeon to the Roosevelt Hospital.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JULY 18, 1908.

CITIES	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	—	—
Chicago	526	187	Waltham	10	1
Philadelphia	517	244	Pittsfield	7	2
St. Louis	—	—	Gloucester	4	3
Baltimore	250	108	Brookline	2	1
Cleveland	—	—	North Adams	8	—
Buffalo	—	—	Chicopee	4	3
Pittsburg	—	—	Northampton	5	1
Cincinnati	—	—	Medford	5	2
Milwaukee	—	—	Beverly	2	—
Washington	—	—	Leominster	1	—
Providence	65	26	Hyde Park	7	3
Boston	212	84	Melrose	—	—
Worcester	35	12	Newburyport	—	—
Fall River	67	53	Woburn	6	1
Cambridge	25	11	Westfield	3	1
Lowell	37	24	Marlboro	4	0
Lynn	16	7	Revere	1	—
New Bedford	28	23	Attleboro	3	2
Springfield	21	6	Peabody	—	—
Lawrence	39	23	Adams	2	2
Somerville	10	3	Clinton	1	0
Brockton	6	2	Gardner	—	—
Holyoke	16	14	Milford	5	3
Malden	11	2	Watertown	2	2
Chelsea	6	1	Plymouth	—	—
Newton	7	—	Weymouth	0	—
Salem	16	11	Framingham	2	—
Haverhill	11	3	Southbridge	1	—
Fitchburg	12	3	Wakefield	—	—
Everett	4	4	Webster	—	—
Taunton	11	3	Arlington	3	3

LIST OF CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED JULY 22, 1908.

MEAD, F. W., surgeon. Directed to proceed to Tuckerton and Atlantic City, N. J., for the purpose of examining keepers and surfmen of the Life-Saving Service, upon completion of which to rejoin his station at Savannah, Ga. July 18, 1908.

WASDIN, EUGENE, surgeon. Granted leave of absence for one month from Aug. 1, 1908. July 21, 1908.

CLARK, TALIAFERRO, passed assistant surgeon. Directed to proceed to Lebanon, Pa., for special temporary duty, upon the completion of which to rejoin his station at Philadelphia, Pa. July 20, 1908.

SCHERESCHEWSKY, J. W., passed assistant surgeon. Directed to proceed to Ocean City, Md., and Chincoteague, Wachapreague and Cape Charles City, Va., for the purpose of examining keepers and surfmen of the Life-Saving Service, upon completion of which to rejoin his station at Baltimore, Md. July 18, 1908.

BAHRENBURG, L. P. H., passed assistant surgeon. Directed to proceed to Point Pleasant, N. J., for the purpose of examining keepers and surfmen of the Life-Saving Service, upon completion of which to rejoin his station at Ellis Island, N. Y. July 18, 1908.

EBERT, H. G., assistant surgeon. Relieved from special temporary duty at San Francisco, Cal., and directed to report to Medical Officer in Command, San Francisco Quarantine Station, Angel Island, Cal., for duty and assignment to quarters. July 17, 1908.

MULLAN, E. H., assistant surgeon. Granted leave of absence for two days from July 15, 1908, on account of sickness. July 21, 1908.

CLARK, E. S., acting assistant surgeon. Leave of absence granted Acting Assistant Surgeon Clark for ten days from June 11, 1908, amended to read for six days from June 15, 1908.

MCGINNIS, R. H., acting assistant surgeon. Granted leave of absence for fifteen days from Aug. 17, 1908. July 17, 1908.

SAFFORD, M. V., acting assistant surgeon. Granted leave of absence for five days from July 14, 1908, under paragraph 210, Service Regulations.

BARNETT, E. E., pharmacist. Granted leave of absence for twenty-eight days from Aug. 5, 1908. July 15, 1908.

MISKIMON, R., pharmacist. Granted leave of absence for seven days from July 18, 1908, under paragraph 210, Service Regulations.

ROGERS, E., pharmacist. Granted leave of absence for three days from July 8, 1908, under paragraph 210, Service Regulations.

TROXLER, R. F., pharmacist. Granted leave of absence for two days from July 17, 1908. July 16, 1908.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING JULY 25, 1908.

W. S. HOEN, passed assistant surgeon. Ordered to Washington, D. C., and report to the Bureau of Medicine and Surgery, Navy Department, for further orders when discharged from treatment at the Naval Hospital, Mare Island, Cal.

C. E. STRITE, assistant surgeon. Detached from the "Franklin" and ordered to the Naval Hospital, Norfolk, Va.

H. W. COLE, JR., assistant surgeon. Ordered to the Navy Yard, Charleston, S. C.

P. R. STALNAKER, assistant surgeon. Ordered to the Naval Hospital, Annapolis, Md.

L. W. MCGUIRE, assistant surgeon. Detached from the Navy Yard, Charleston, S. C., and ordered to the "Montana" when commissioned.

C. MCLARTY, pharmacist, retired. Detached from the Naval Hospital, Mare Island, Cal., and ordered home.

L. W. BISHOP, assistant surgeon. Detached from the Naval Recruiting Station, Indianapolis, Ind., and ordered to the Naval Hospital, New York, N. Y., for treatment and observation.

C. BIDDLE, medical inspector. Detached from the Marine Recruiting Station, Philadelphia, Pa., ordered home and granted leave for two months.

D. G. SUTTON, assistant surgeon. Detached from the Naval Hospital, Newport, R. I., and ordered to the "Franklin."

G. C. RHOADES, assistant surgeon. Detached from the "Franklin" and ordered to the "Scorpion."

G. B. CROW, A. L. CLIFTON, J. R. PHELPS, assistant surgeons. Commissioned Assistant Surgeons from July 15, 1908.

AMERICAN HOSPITAL ASSOCIATION.

IT is announced that the tenth annual conference of the American Hospital Association will be held at Toronto, Canada, from Sept. 29 to Oct. 2, instead of earlier, as at first announced.

POSITIONS UNDER UNITED STATES CIVIL SERVICE.

THE United States Civil Service Commission announces an examination on Sept. 2–3, 1908, to secure eligibles from which to make certification to fill a vacancy in the position of first assistant surgeon (male), Freedmen's Hospital, at $1,500 per annum, and vacancies requiring similar qualifications as they may occur at that hospital.

The Freedmen's Hospital is an institution for the treatment of colored patients, and it is understood to be the practice of the Department to appoint only colored persons to positions therein.

The United States Civil Service Commission also announces an examination on Aug. 26, 1908, to secure eligibles from which to make certification to fill a vacancy in the position of clinical director in the Government Hospital for the Insane, at a salary of $2,000 per annum, with maintenance in the hospital, and vacancies requiring similar qualifications as they may occur in any branch of the service.

Applicants should at once apply to the United States Civil Service Commission, Washington, D. C.

BOOKS AND PAMPHLETS RECEIVED.

Restricted Procreation. Introducting a Review of Robinovitch and Others on Specific Human Energy. By C. H. Hughes, M.D. Reprint.

The Law of Beauty in Human Anatomy. By B. S. Talmey, M.D. Reprint.

Epilepsy and Its Treatment. By William Francis Drewry, M.D. Reprint.

The Syncytium, Its Functions and Its Relations to the Toxemia of Pregnancy and to Cancer: Probability of a Primal or Universal Antitoxin. By George W. Wood, M.D. Reprint.

On Some Non-Specific Reactions of Mallein. By H. J. Südmersen, Ph.D., and A. T. Glenny, B.Sc. Reprint.

Ortho-Roentgenography. By Dr. Franz M. Groedel. Reprint.

The Shattuck Lecture.

SOME ASPECTS OF GONORRHEA.*

BY FREDERICK FORCHHEIMER, M.D., CINCINNATI, OHIO.

The history of gonorrhea is written in the earliest records of man: especially do we find definite statements in the Bible, in Leviticus, Chapter XV. This chapter refers to the prophylaxis of a "running issue out of the flesh," and upon the definition of an issue depends our reading of that part of the chapter which is devoted to this subject. The second verse of Leviticus, Chapter XV, is referred to in the Century Dictionary as illustrating its definition: "A vent for the passage of blood or morbid matter, a running sore, accidental or made as a counter-irritant." In the Latin Vulgate of St. Jerome the running issue of the flesh is translated as *fluxum seminis.* As part of this chapter is looked upon by specialists as referring to gonorrhea, and as I know nothing of the original text, I consulted an authority in Hebrew with regard to it. Prof. Gotthard Deutsch, of the Hebrew Union College, and editor of the Jewish Encyclopedia, explained the whole situation as follows: The original employs the word *Zab,* which means a discharge, and has always been accepted as referring to gonorrhea; it cannot refer to a discharge of semen, in that in Leviticus, Chapter XV, verse 16, the word *Zera,* which means sperma, is employed. And, furthermore, the first fifteen verses of Leviticus XV show conclusively that an infective discharge from the genitals was referred to as an issue.

However positive we may be in the male as to the meaning of a running issue, this is not the case in the female, the word *Zaba,* a female afflicted with a running issue, being used in a context, which makes it impossible to be absolutely sure, yet a philological view would also cause one to believe that gonorrhea is meant. The translation of St. Jerome was completed in 405 A.D.; it was finally done directly from the Hebrew text, but his definition of issue may be ascribed to two reasons: either, as is even done to-day, a flow from the penis was looked upon as a seminal discharge, or, as is even more probable, Jerome had in view the Greek term *γονόρροια* (from *γόνος* a seed and *ῥέω*). Although this term was first introduced by Galen in the second century, it was probably known to Jerome.

As to the cause of gonorrhea, the authors before the fifteenth century believed it to be impure semen, increased and pathogenic secretion coming from ulcers of the urethra, or from disease in the bladder or kidneys. In the fifteenth century an epidemic of syphilis spread from France over the whole of Europe. A most remarkable account of an attack of the disease is given by Benvenuto Cellini, in his wonderful autobiography, in the beginning of the sixteenth century. At the same time, in "Drei Bücher von den Franzosen," 1529, Paracelsus expresses an opinion as to the etiology of the Franzosen (Morbus Gallicus) which held good until the eighteenth century: "*Biss auff den Ursprung der Franzosen ist auch beschehen, das zu beiden Seiten vil Frawen und Mann einander Krankheiten zu gefügt haben, und doch nicht Blatterische art. Das mag nit widerredt werden, anders dann dass die Frantzosen eine vermischte Krankheit ist von allen zusammen, gesetzt*" (Haeser). (It has also occurred before the coming of the French disease that, on both sides, many women and men have produced sickness in each other, and yet not of a pustular nature. This cannot be explained, except in that the French disease is a mixed disease, composed of all the others combined.)

In 1767 Francis Balfour, of Edinburgh, in his "*Dissertatio de Gonorrhea Venerea,*" first showed that gonorrhea and syphilis are due to two distinct poisons. This view, which was accepted by Morgagni and others, would have prevailed had it not been opposed by John Hunter, so that the profession was divided into two camps, one believing in the identity, the other in the non-identity, of the two poisons. The subject was settled definitely by Ricord in 1831, who, by means of a large number of inoculations in human beings, conclusively established the fact that gonorrhea never produces chancre, as well as the converse of this, so that opposition to the dual view of the two poisons gradually ceased. But from Ricord to Neisser (1879) the medical world was divided as to the specificity or non-specificity of the gonorrheal virus. During this time, and for some time afterwards, an attack of gonorrhea was looked upon as of the same importance as a bad cold. With the discovery of the bacterial cause came a new era, as it has come to us in all the acute infectious diseases. A definite cause being known, gonorrhea came to be absolutely recognized, so that diagnosis, treatment and our general knowledge of the disease were placed upon a more definite basis. With this also came, as is natural and common in all new discoveries, statements which did not agree with the common experience of practitioners. Moreover, in various countries of the world there is an organized movement to promote sexual purity in the male. In common with all anti-movements when applied to medicine, many exaggerated statements have been made, at least statements which will bear careful investigation. I refer to the frequency of the disease, some of its complications, but especially its sequelæ. These will form the subject of our discussion.

An examination of morbidity in large numbers of men will give us somewhat of an insight as to the frequency of gonorrhea. For this purpose, statistics derived from regular armies, in which the men are under medical surveillance, seem to be most suitable. Statistics are available for nearly all European armies, and have been collected and tabulated by Dr. Heinrich Schweining. For the figures in our own army, I am indebted to the Surgeon-General, Dr. R. W. Reilly; for those of our navy to Surg.-Gen. R. S. Rixey. For those of Schweining that will be quoted, the number of years included is five; for our army, ten, and for our navy, seven.

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*Delivered before The Massachusetts Medical Society, June 9, 1908.

In a tabulated form they are as follows:

TABLE I.

MORBIDITY.

	Per Cent.
Prussian Army,	1.23
Bavarian ,,	1.39
Austrian ,,	3.02
French ,,	1.81
Italian ,,	4.6
British ,,	5.94
U. S. ,,	8.95
U. S. Navy,	3.88

From this table it will be seen that the morbidity varies from 1.23% to 8.95%. That the English-speaking armies stand highest in the list is rather a surprising result. An explanation for this may be sought in the difference of personnel that exists between English-speaking soldiers and those of other countries, especially in respect to authoritative control, but also in other reasons which will be mentioned hereafter. That in the navy the number should be less than one half of that in the army is easily understood, as in the navy the chance of infection is less and, possibly, the men are under stricter surveillance than in the army.

For civil life statistics have been collected by Blaschko, as follows:

TABLE II.

		Per Cent.
Copenhagen,	1876–1895	12.8
Students of agricultural and veterinary schools, Berlin (600).	1891–1892	18.5
Mercantile Sick Associations,	1893–1897	
Hamburg,		10.3
Berlin,		12.
Breslau,		20.
For thirty large and small cities,		12.3 (average)

This table, when compared with Table I, shows that, in civil life, gonorrheal morbidity is higher than in the army or navy. Furthermore, that, as in all acute infectious diseases, morbidity differs, for various reasons, in different places. Thus, for merchants, Hamburg has only one half the morbidity that is found in Breslau. When all occupations in all localities in Germany are examined, i. e., as far as this has been done, the following results are obtained. Next to soldiers, the lowest morbidity is found in workmen, the highest in the middle classes, merchants, students, officers, professional men; the "upper ten thousand," on the other hand, are least affected, "on account of the exclusiveness of their sexual relations" (Blaschko). In this country, merchants, students, professional men, would be ranked among the higher classes, but the relation of morbidity is the same as in Germany, even when "the upper ten thousand" are considered. In speaking of the relations of morbidity, I exclude our soldiers altogether for reasons which will appear presently. The reasons why morbidity is so low in the working classes are many, principally in that the working classes, when single, have neither leisure nor means to indulge their sexual appetites, and, possibly, in that hard physical labor reduces sexual desires.

It has been so often stated that venereal diseases are on the increase that it has seemed necessary to look into this question. For men, we again have the statistics of armies, which give us the morbidity of large numbers, year by year. They are not only important as to the morbidity of these men, but also as to the relative morbidity of the communities in which these men live; therefore, as to general morbidity year by year. All the armies of Europe show a decrease in the frequency of gonorrhea, although, as in all other infectious diseases, and for unaccountable reasons, some years will be found which are exceptions to the general rule. For civil life the Copenhagen statistics show a morbidity of 13.8% in 1886 and 10% in 1895, in men between twenty and thirty years of age. Table III shows plainly to what extent this diminution in morbidity has taken place.

TABLE III.

Armies.	Time.	Total Per Cent. Decrease.	Average Annual Decrease. Per Cent.
Prussian Army	1881–82 to 1900–01	56.6	2.8
Bavarian ,,	1881–82 to 1902–03	59.9	2.7
French ,,	1880 to 1902	56.6	2.5
Belgian ,,	1880 to 1903	59.4	2.5
Italian ,,	1881 to 1901	29.1	1.4
Austrian ,,	1879 to 1902	29.2	1.2

This table, also taken from Schweining, is very instructive because it shows the German armies, the French and the Belgian, on about the same plane in the reduction of morbidity, while in the Italian and Austrian armies the figures are much lower. In the English army as well there has been a reduction in incidence of the disease which is not brought out in the table as the figures did not lend themselves to comparisons. For the continental armies the steady decrease is ascribed to prophylactic measures, the statement being made that in proportion to the strictness in prophylaxis the greater the reduction in morbiity.

As our army forms a most extraordinary exception as to constant reduction in morbidity, it is well worth our while to study the conditions.

It will be seen that, with slight interruptions, there has been an increase in morbidity since 1898, reaching a maximum of 13.1% in 1905, i. e., one soldier in 7.61, or 7.471 cases of gonorrhea in one year. The table also shows that in ten years 70.899 soldiers had had attacks of gonor-

TABLE IV.

		Cases.		
Years.	Mean Strength.	Number.	Per Cent.	Ratio.
1897	25.417	1.440	5.6	17.65
1898	147,795	7.683	5.1	19.21
1899	105,546	8.468	8.0	12.46
1900	100,389	7.899	7.8	12.71
1901	92,191	8,685	9.3	10.65
1902	80,778	8,609	10.6	9.38
1903	67.643	6,503	9.6	10.40
1904	58,740	7.106	12.0	8.27
1905	56,901	7.471	13.1	7.61
1906	56,443	7.035	12.4	8.2
Total,	792,143	70.899	8.9	11.17

rhea. This enormous number of cases certainly demands investigation as to its cause, as there is no doubt that so many cases of infection seriously affect the efficiency of the army — in peace, in the direction of its development; in war, in the performance of its duties. Moreover, the sequelæ incident to gonorrhea in so many is a matter of serious importance to the state, disregarding the soldier and only considering the citizen.

If we look at the following table, showing admissions for gonorrhea and alcoholism, kindly compiled by Dr. Walter W. McCaw, major medical corps, United States Army, some light is thrown on this subject. It includes the regular and volunteer army, with ratio per thousand of mean strength, by years. Scouts and Porto Rican provisional regiments are not taken into consideration. In the years marked with a cross, officers are also included.

The table should be studied in the light of the fact that the sale of beer and light wines was forbidden in the canteen in February, 1901. While the ratio of gonorrhea to 1,000 men was going up almost uninterruptedly from 1895 to 1900, the average yearly ratio was 62.07. The ratio still going up, the average annual ratio per thousand, from 1901 to 1906, inclusive, was 112.26 (an increase of 87%). An analysis of the alcohol morbidity on the same lines shows that in the first six years, before abolition of beer and wines, the average yearly ration was 20.92; in the second six years, 26.27, representing an increase of 25%+. If we permit this increase in alcoholism to account for the same increase in gonorrhea, there remains an increase of 62% gonorrhea, which must be explained in a different manner. It seems clear to me that, having taken away the attractiveness of the canteen, and I employ this term in a general way, not especially referring to beer and light wines, the soldier leaves the barracks more frequently and finds more dangerous attractions. Whatever may be said for or against the canteen, and it seems that a canteen without beer or light wines does not fulfill the functions of a perfect canteen, gonorrhea has increased 45% and alcoholism 20% since the canteen has been modified. But the changes in the canteen alone do not explain this enormous increase in gonorrhea, as we also see an increase in gonorrhea in the navy, where there is no canteen. A glance at the following table shows the exact increase:

TABLE V.

Gonorrhea.			Alcoholism.		
Years.	Number.	Ratio.	Years.	Number.	Ratio.
1895	1,278	50.71	1895	759	30.11
1896	1,361	54.18	1896	730	29.06
1897	1,140	56.65	1897	708	27.86
X1898	7,638	51.99	X1898	1,279	8.65
X1899	8,168	80.23	X1899	1,529	11.49
X1900	7,899	78.69	X1900	1,540	15.34
X1901	8,685	63.90	X1901	2,018	21.82
X1902	8,609	106.58	X1902	1,830	22.65
X1903	6,503	96.14	X1903	1,670	24.69
1904	7,166	120.97	1904	1,622	27.61
1905	7,171	131.30	1905	1,687	29.65
1906	7,035	124.65	1906	1,762	31.22

TABLE VI.
United States Navy.

Years.	Mean Strength.	Number.	Cases.	
			Per Cent.	1 in every X men.
1900	22,977	525	2.29	43.76
1901	26,101	617	2.36	42.30
1902	30,249	771	2.55	39.10
1903	36,535	1,032	2.82	35.40
1904	39,450	1,512	3.83	26.10
1905	39,620	2,085	5.26	19.00
1906	41,690	2,640	6.33	15.80
Totals,	236,622	9,182	3.88	25.77

From 1900 to 1906 the percentage of cases has gone up from 2.29% to 6.33%, and the ratio of one to every X number of men (mean strength) has changed from 43.76 to 15.80. Of the 246,622 men in the navy, 9,182 have had gonorrhea. While this number is sufficiently great, it dwindles into insignificance as compared with that of the army, but it shows us that the canteen cannot be held responsible for the whole trouble.

There is no doubt that the situation calls for rigorous prophylactic measures; that gonorrhea can be reduced to a minimum in large bodies of men under control has been shown; that the same prophylactic measures, modified for the personnel of our army and navy, will do the same for us cannot be denied.

In regard to morbidity in women, the statements differ as widely as with men. The kind of material utilized seems to determine the frequency of gonorrhea in the female as much as anything else. Thus in gynecological practice, Bröse saw 45 in 302 = 14.5% when patients in private practice only were considered; in all his cases that came for treatment, 898, 176 = 26.6% had gonorrhea. Sänger saw 29 in 161 = 8%, and Eberhard, 20% gonorrhea, both in private practice. It seems reasonable to conclude that these figures are too high when applied to all females, because gynecologists only see patients who suffer from genito-urinary diseases and no others; therefore, these figures represent the percentage of gonorrhea in women affected with genito-urinary diseases which are seen by gynecologists. The differing results are best illustrated by figures from the Massachusetts General Hospital: In the first six months of 1906, 1,027 women were admitted; of these, 39 had gonorrhea, = 3.8%; in the out-door department, 3,637 women were examined; of these, 111 had gonorrhea or its sequelæ, = 1.6%+; or more than three times as many in indoor as in dispensary patients. In Erb's statistics, 6.25% had gonorrhea, making the most liberal allowance possible in accepting manifestations as being gonorrheal. Whichever of these latter figures may be accepted, they again show how much exaggeration has been indulged in in estimating the frequency and dangers of gonorrhea.

The statements as to morbidity represent only those males or females who have gonorrhea at a given time, therefore not the number who have had gonorrhea during their lifetime. In order to determine how many men have had gonorrhea (and it is the man who is now accused of doing all the harm), it is necessary to find some other way. As gonococcus infection does not produce permanent immunity, and as individual immunity is a minimum quantity, if it exists at all, it will be seen that the figures just presented will give us very little insight into this question. It was Ricord who first made the definite statement that 80% of men have had gonorrhea, a statement that has been and is still being quoted and accepted all over the world. If this figure is correct, it follows, as the result of modern scientific investigation, that the possibility of harm done by gonorrhea, both to the males and to their wives and children, may be very great.

In the last five years this question has been taken up, especially by the Germans, with results so varying that further evidence is necessary to answer it.

In 1902 A. Blaschko, of Berlin, published a paper which was based upon the following facts and computations: The Prussian government asked that on the 30th day of April, 1902, all physicians of Berlin should examine their patients as to the presence of gonorrhea. There followed a report from 52% of all the physicans, who had examined 10,000 patients and found 83 having gonorrhea. Blaschko, in taking up this report, makes corrections, based upon other statistics; moreover, considers the fact that many cases of gonorrhea are not seen by licensed physicans, and finally computes that the number should be 240 instead of 83. By the further employment of mathematics, the data being a one-day inquiry of 52% of all the physicians of Berlin, a report in 10,000 cases, finding of 83 cases of gonorrhea in these (raised to 240), and the consideration of other statistics, the following conclusions are drawn: (1) The number of cases of gonorrhea occurring in one year is 1,920. (2) Out of 1,000 men between twenty and thirty years of age, nearly 20% have gonorrhea every year. (3) If a man older than twenty years remains unmarried for five years, he will have gonorrhea once; if unmarried for ten years, twice. (4) All men who marry after thirty years of age will have had gonorrhea twice. Gruber, who takes his statistical methods from Blaschko, the latter defending these in a later publication, states that 25% of all students in Berlin have gonorrhea in one year; therefore, every student will have had gonorrhea once in four years.

Here are specimens of computations, taken from morbidity alone, which, in the nature of things, must be incorrect. After all the students have had gonorrhea in four years, and they get second attacks, the percentage of gonorrhea in the male is put down as high as 150 or 200% by these observers. Whatever may be the statistical method of expression, only 100% of male human beings can have gonorrhea. Moreover, it is a well-recognized fact that all human beings do not have gonorrhea, so that if this statistical research is worth anything at all it expresses, in figures, only the chances that exist for an individual to acquire the disease.

In 1904, no less a medical personage than Erb, of Heidelberg, took up the investigation of the frequency of gonorrhea in men and has now contributed to our knowledge of the subject in three articles (1906 and 1907). In his first paper he refers to 600 individuals, aged twenty-five years and over, 43.3% of whom only had had gonorrhea. In his second paper, his material has grown to 2,000 individuals, of whom 48.5% have had gonorrhea. He has taken all patients who have consulted him and inquired into their antecedent history, instituting what he calls a retrospective method. He does not claim more for his statistics than is presented, and asks for confirmation or refutation. So far Bettman has reported 240 individuals examined in a dermatological clinic, between twenty and thirty years of age, the gonorrheal incidence being 41%; and Yudice, with the same kind of material, finds it 50.3%.

In order to find what percentage there is in Cincinnati, I have subjected my own male patients to a strict examination as to their gonorrheal history. My material is somewhat peculiar because, in the greater number of cases, the individuals have been under my care for twenty-five years or more, at a time then when gonorrheal morbidity is greatest in them. Furthermore, no individual under thirty years of age was recorded. This was done because about 95% of all cases of gonorrhea occur between the ages of sixteen and thirty. In 258 individuals, 54.1% had had gonorrhea, 45.9% had not. The occupations were as follows: 176 merchants and bankers, 14 salesmen, 38 professional men, 8 musicians, 10 farmers, the remainder artisans. Upon the whole, this is corroborative of Erb's statistics, 54.1% to 48.5%, my collection offering about 5% more than Erb's. In the Massachusetts General Hospital, east service, out of 349 male patients (year 1906–1907) only 77, i. e., 20%, had had gonorrhea (F. C. Shattuck), again demonstrating the lower percentage in the so-called lower classes.

As will be readily understood, these retrospective statistics were assailed by many, principally on two grounds: that individuals forget attacks of gonorrhea, and that they prevaricate. It is possible that a few may forget an abortive attack, but a well-developed case of gonorrhea is not forgotten, as it entails too much suffering. In addition, when it is not taken in hand properly, frequently when it is, sequelæ develop which impress themselves upon the patient's memory with increased force; at least such has been the case in most of my patients. That patients do not tell the truth as to gonorrheal attacks has not been my experience. There is no reason why they should not tell the truth; they have had a disease comparable in importance with a bad cold, which could not permanently damage either themselves or their offspring — at least such has been the teaching before the advent of the gonococcus. In syphilis it is different; this is a disease which the layman knows to be transmissible and which may do great harm to the individual and his offspring. As a result, and I cannot agree with Erb here, the statements regarding the previous history of syphilis are unreliable. When the time comes that laymen are taught the dangers of gonorrhea, as is done by Janet, who says that "the social importance of gonorrhea is to that of syphilis as 100 to 1, not only because of the number of persons attacked, but also on account of the gravity and perpetuity of the lesions," a retrospective view of an attack of gonorrhea will be less pleasant and the individual will sink in his own estimation,— both incentives for forgetting or not remembering.

The question of sterility in relation to gonorrhea is one that has called out a great variety of expressions of opinion, many of which are merely surmises. It will be interesting to note here that Rabbi Johanan, who is supposed to have lived in the third century, calls attention in the Talmud to the relation of gonorrhea and sterility in the female. He gives ten different directions for curing this sterility. The first one is as follows: "Take the weight of one denarius of Alexandrian gum and the weight of one denarius of alum (or aloes) and one denarius weight of fine crocus, and mix them in three times the quantity of wine and give to the woman afflicted with issue (*Zabah*) and she will not be sterile. If you put the same ingredients in twice the quantity of brandy (made from dates), it will heal jaundice, but will leave the patient impotent." I have looked through the remaining nine prescriptions, which are more or less fantastic, and can find nothing which would affect gonorrhea; indeed, all of these have to be given to the patient and then followed by the words "arise from thy blood issue." As there are so many prescriptions, and most of them require a long time to prepare and to take, I am afraid Rabbi Johanan was not very successful in his treatment.

Noeggerath, who first invented latent gonorrhea, in 1876, stated that in every 1,000 men, 800 had had gonorrhea, which was followed by infection of their wives in a great majority of instances. He also believes, as does Fürbringer, that after a gonorrheal inflammation the testicle no longer produces spermatozoa, which has been completely disproven, as Benzler has shown for the German army that, even after bilateral epididymitis, only 41.7% childless marriages resulted. Noeggerath claims that 50% of all sterility is due to gonorrhea, Neisser 40%, Flemming 80%. Doctor states that every father who gives his daughter in marriage must be prepared to have her infected with gonorrhea with all its sequelæ. Lawson Tait caps the climax by stating that after a man has once had gonorrhea he should not be allowed to marry.

It has seemed to me that the only way to arrive at any conclusion approximately correct in regard to the percentage of sterility must come from the observation of married couples in which the male, the female or both have had gonorrhea. This has been done by Schenck, by Seligman and by Erb, with the result that these found the following percentages of sterility due to gonorrhea: 23.7, 8.5, and nearly 12.

In the Massachusetts General Hospital, of 161 married men with sufficiently adequate family histories, 35 admitted venereal disease; 21% were sterile marriages. As 7 of these had had syphilis as well, this percentage is probably too great when applied to gonorrhea alone. It is noteworthy that the number of children per man was 2½+, somewhat larger than the average in a married couple at the present day. These statistics are very valuable, as they show the same percentage of sterility in the total number as in those affected with venereal disease, therefore giving a little higher percentage of sterility, 23% in those not affected by venereal disease. Even in prostitutes sterility is not so common as is accepted by all of us. Laser, in Breslau, found that in 44 prostitutes, all infected with gonorrhea, 24 had had children, i. e., 55%; 11 had borne one child; 5, two; 4, three; 2, five; 1, six, and 1, seven.

Erb's statistics were collected in the following way: He had general practitioners make a collection of 400 married couples of which the men had had gonorrhea, the wives being examined. Three hundred and seventy-five women were well (93.75%), 17 (4.25%) had gonorrhea, possibly 8 (2%) more. In 88 there were no children, 44 (not quite 12%) in which no other cause except gonorrhea was found, in 40 there were other causes, and in 4 there was prevention of conception. He states, however, that sufficient attention was not given to this last cause. Even Blaschko admits that these results are fairly reliable.

In trying to arrive at a conclusion I have followed a different course. I have taken three generations, the histories of which were all known to me, whom I have attended in all kinds of illnesses; some of the second and many more of the third generation I have assisted into the world. In the first generation I had to select my material, as, for manifest reasons, childless couples were of no service for the present purpose. Furthermore, it was necessary that all these married couples lived beyond the period of fecundity, otherwise the second generation would not give results that could be utilized. Widows and widowers were excluded, as the number of children might not be sufficiently correct. For these reasons the number of married couples which would serve our purpose is necessarily a small one, 42. Of these 84 people, 19 are alive, 6 men and 13 women, the youngest being seventy, the oldest ninety-four years of age. In the second generation the youngest is thirty-five years and the oldest sixty-six years of age. But childbearing in this generation is over, as will be seen hereafter; if any more children come the general result will be but little affected, at all events they will be principally accidental accretions. A possible source of error may be found in that 16.8% are unmarried, but this will also be very small. In the third generation the youngest is two years and the oldest thirty-one years of age.

In the first generation the forty-two couples had 226 children, i. e., 5.3 children to each couple, of which 17.2% died. Of the 226 children, 150 married and had 331 children, i. e., 2.2 children for each married couple, a reduction of more than 50%. It will immediately be seen how grotesque the explanation for this reduction in birth-rate would be if we put it on an exclusively gonorrheal basis. If this were done, the gonorrheal incidence in the first generation being the same as in the second, there would be no reduction in the birth-rate; if it were less, the birth-rate would be greater; if greater, it would have to be 100% to equal the reduction. In the 150 married couples of the second generation, 11 are sterile (7.3%). Only 9 of these can be considered, in that two women were married after the menopause had set in; in addition, in three married couples at least there was a sufficient explanation aside from the gonorrhea of the male. In the 6 that are left, 5 men had had gonorrhea, 1 had escaped; so that there are left five married sterile couples in which there was gonorrhea in the male; in one of these there is fear of some hereditary disease in the children, so that precautions are taken not to have children. There are finally left four couples in whom sterility may be ascribed to gonorrhea in the male, but as far as this history goes no evidence of gonorrhea has been found in the female. If gonorrhea produced sterility in these four cases, the relation of cause and effect being proven, it would show that in 22.5% of sterility, gonorrhea is the cause. As, however, no gonorrhea has been found, and the number of cases is very small, continued investigation is required.

It is not the question of absolute sterility, however, which is now considered as of sole importance in gonorrhea, but that form of sterility which has been called "one-child sterility." Indeed, some have gone so far as to state that one-child sterility is *par excellence* the form which follows gonorrheal infection of the female, as it is especially after confinement that the gonococcus is found in the uterine cavity, multiplying very rapidly in the lochia, according to Bumm and to Steinbüchel, producing metritis, salpingitis, oöphoritis, perimetritis and other lesions. The only statistical researches are by Schenk, to whom I believe we are indebted for the remarkable term "one-child sterility," who says that this is due to infection of the tubes during pregnancy in 43% of all instances. Erb has also investigated this subject and found one-child sterility in 74 married couples out of 370 (21%). In 13 of these he found prevention of conception, and he admits that this part of the research is not sufficiently accurate; in 44 no cause was found.

If we now turn to my own statistics of the three generations, we find that among the 150 married couples, with 331 children, there are 39 in which the outcome was one child; if we deduct five widows and three widowers, there are left 31 married couples in whom the question of one-child marriages may be investigated. It gives us first the astonishing figure that in 142 married couples there was one child in 28%+, 7% more than Erb. Secondly, in the 31 cases of one-child matrimony, there was prevention of conception in 24 married couples, none in only 6, 1 case could not be examined into at all. Eighteen of the men had had gonorrhea, and in 5 there was no prevention of conception. In these five the wives were normal in two instances, in one case there was pulmonary tuberculosis, in the other two there was a metritis and a salpingitis, so that out of the 18 cases which could have contracted gonorrhea from their husbands, there were only 2 who presented any evidence of illness of the genito-urinary apparatus. It has not been positively proven that these two cases are due to gonorrheal infection, but accepting this to be the case, it will be seen that the cause for "one-child sterility" can be ascribed to gonorrhea in only about 11% of all the cases of sterility. Unfortunately, in going into this research I neglected to inquire in all the cases into the number of abortions which occurred after the one child was born, but in this series of cases there were five at least.

In 12 one-child marriages a gonorrheal history was altogether absent; in all of them, as far as I inquired, there were three miscarriages. Three children represented failures in preventing conception. In all except two further conceptions were prevented; in these two, one had passed the menopause, and the other had a misplaced uterus. In this small series only two did not prevent conception, so that in the whole series of 31 cases there are only 6 instances of one-child matrimony which could not be explained in this manner. It is true that two had evidences of gonorrhea, and it is possible that more had had the disease, the evidences of which had disappeared. The fact remains that in 24 of these married couples prevention of conception and sometimes abortion caused one-child matrimony. In many instances the husbands did not hesitate to state that they wanted to have only one child, for the ordinary reasons that are known to all of us; in others there were special causes assigned, some valid, others as trifling as could be imagined. In the latter class one woman was afraid of a recurrent external ear furunculosis which had developed during her first pregnancy, and which could not be allowed to recur, as it would cause deafness. The fear of hereditary transmission of disease was present in three instances of tuberculosis, but it developed only after the one healthy child had been born. In 2 there were valvular diseases, 5 had latent tuberculosis; in these 7 the danger of pregnancy to the mother had been pointed out by the physician.

I refrain entirely from a statistical research of the other complications and sequelæ; this has been done and, as science advances, will undoubtedly require revision. The conclusions I arrive at cannot be looked upon as definitive, in that they are those of one individual working with material in one place. Upon the whole, they verify Erb's conclusions, but in order that they be accepted it is necessary that many investigators in many places, and utilizing all kind of material, shall investigate the questions.

To recapitulate the results of my studies the following brief statements will be sufficient:

1. The morbidity of gonorrhea is diminishing.
2. The American army and navy are exceptions to this rule.
3. The present mathematical methods of deducing incidence of gonorrhea in all men from morbidity lead to fallacious results.
4. 54.1% of all males have gonorrhea during their lifetime.
5. We have not sufficient knowledge of the facts to state how many women have had gonorrhea during their lifetime.
6. The small number of my cases of sterility does not justify any positive conclusion.
7. Prevention of conception is the cause of "one-child sterility" in the majority of instances.

The object of my investigation was to determine the truth of the statements which have been made, in this country as well as abroad, by men and women who are interested in the suppression of venereal diseases. Whenever my figures have shown anything it is always that the propagandists have greatly overestimated the frequency, the complications and the dangers of gonorrhea. This has been notably the case with specialists in genito-urinary diseases in the male and in the female. With few exceptions, which have been referred to, these observers have done that which is natural to all of us — magnified their office. Moreover, many who have written have been satisfied with the old figures of Ricord (80% of all males have had gonorrhea) which, combined with the views of Noeggerath, would make it appear that very few men and women could escape having gonorrhea. If to this there are added the remarkable mathematical gyrations of Blaschko, which are supposed to represent statistical methods, it is little wonder that the layman becomes an anti-gonorrhoic howling dervish. This is seen especially in Germany, according to Erb, where the women suffragists speak of an almost universal "poisoned wedlock" due to gonorrhea, because no man enters matrimony healthy and pure, and his wife must suffer for the sins of his youth; of sterility increased and, therefore, countries depopulated.

That there is much damage done by gonorrhea is abundantly shown by all statistics; therefore, it is a righteous cause to fight for its reduction. But no righteous cause is aided by such lurid statements as have been made in connection with gonorrhea. Eventually the truth will be found and the good cause will suffer because of exaggeration. The harm done by gonorrhea is sufficient, even upon sober and sound investigation, to stimulate all of us to the necessity of combating the spread of venereal diseases. That they can be eradicated seems out of the question; that their frequency can be reduced has been abundantly shown. As physicians we are always ready to prevent disease; but we are not in a position to control the situation as we can in many other infections, for reasons manifest to all. We should, therefore, ask assistance for the earnest and intelligent co-operation of the laity, who should be taught the necessity and importance of reducing the frequency of venereal diseases. The difficulties which beset the prophylaxis of venereal diseases are known to all of us, but much can be done by individual endeavor of the physician. Indeed, unless public opinion changes in English-speaking countries, not much more can be expected in the near future.

Original Articles.

STENOSIS OF THE PYLORUS IN INFANCY. A SURGICAL EMERGENCY. A REPORT OF FOUR CASES OPERATED UPON WITH RECOVERY. END RESULTS.*

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You are probably familiar with the beginnings of our knowledge of stenosis of the pylorus in infancy. The isolated cases of Beardsley, Williamson and Dawoski are classics. These were the sole recorded cases for the one hundred years previous to 1888. A knowledge of this disease, as in so many other *acute* affections, came first through post-mortem examinations. All of our knowledge of stenosis of the pylorus in infancy, previous to 1898, was derived from autopsy records. The first *operation* for the relief of infantile pyloric stenosis was done in 1898. Since this time the information derived at the operating table has been added to the knowledge acquired previous to this date from autopsy alone.

In 1905, assisted by Quinby, I made a careful analysis and study of the 115 cases recorded in medical literature up to that time. Many interesting facts were developed by that study. Of these 115 cases, 55 were records of post-mortem examinations and 60 were reports of operated cases. Up to 1908 there have been 135 cases operated upon.[1] Only 3 cases have been autopsied and but 5 have been operated upon in France. Between 1898, when the first operative procedure was instituted, and 1905, a period of seven years, 60 operations were done. Between 1906 and 1908, a period of but two years, 75 operations were done for this lesion. The very great increase in the number of operations suggests that the disease is being recognized more readily and that it exists far more commonly than has been supposed. In those communities where it has been diagnosed, the number of cases is continually increasing. During the period from 1898 to 1905,

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*Read at the annual meeting of the Ontario Medical Association, Hamilton, Ont., May 27, 1908.

[1] Dufour and Fredet: Rev. de Chir., Feb. 10, 1908.

8 or 9 operations were done each year, while during the two years preceding 1908, 75 operations were done, or about 38 each year. This represents an enormous increase in cases coming to operation.

The reports of the most complete and recent autopsy findings confirm the earlier post-mortem records. *The findings post-mortem* are almost always uniform, namely, a pyloric tumor of about the size of the end of the thumb, 1 inch by three quarters of an inch. The size of the tumor, of course, varies somewhat, but within very narrow limits. Adhesions have never been found about the tumor. Certainly this suggests that no inflammatory or primarily ulcerative process has been associated with the formation of the tumor. The tumor is oval in shape; its surface is smooth; it is firm, almost hard, resembling cartilage.

The situation of the tumor is constant at the pylorus. In the adult it is ordinarily somewhat difficult to determine the exact situation of the pylorus; necessarily in the infant this difficulty is increased. That Dr. Wm. Mayo should have recently described a method for recognizing anatomically the adult pylorus suggests the difficulty of detecting it. In each and all of these cases of infantile stenosis there has never been difficulty in locating the situation of the tumor at the pyloric end of the stomach. The normal pylorus may be difficult of recognition. The pylorus of the baby with a stenosis is never difficult to locate.

Normally the pylorus, like the intestine, has two layers of muscle fiber in its wall, — an inner layer of circular fibers and an outer layer of longitudinal fibers. *The microscopic examination* of this pyloric tumor finds always present a hyperplasia of the circular muscular fibers. The longitudinal fibers are almost never changed.

Normally *the mucous membrane* lies in longitudinal folds in the pyloric portion of the stomach. These longitudinal folds are found enormously hypertrophied. The significance of these hypertrophied longitudinal folds of mucous membrane lies in three facts:

1. That they may serve as plugs to the lumen of the pylorus and thus occasion obstruction; and
2. At operation these hypertrophied folds may readily lie in the way of nice suture should pyloroplasty be attempted; and
3. They may easily be damaged if an attempt at the Loreta operation is made.

Damage to these folds of mucosa might cause ulceration, leading later to stricture of the pylorus. Occasionally there has been described a fibrous hyperplasia of the submucosa.

Careful *measurements* have been made of the varying thicknesses of the several layers of the pylorus, and in every instance the circular muscular fiber has been found increased in thickness. Measurements have been made also of the pyloric lumen to determine, at least for the pathologist, a standard of size of this lumen. It is an interesting fact in this connection that the degree of the stenosis is in no way proportioned to the degree of the hypertrophy. In all cases measurements have been made in the presence of the tumor, and narrowing of the lumen has been determined.

There are certain *secondary changes* present in the stomach which are of interest. Muscular hypertrophy of the wall of the pyloric segment has been described. In certain cases of long duration a dilatation of the stomach has been found associated with a thinning of the stomach wall. In all of my personal cases the hypertrophy was present, the process not having gone on to dilatation. The stomach is larger than normal. The esophagus is found dilated, caused by the back pressure from the stenosis. The intestine is collapsed and empty. There is little or no evidence of a catarrhal process in the mucous membrane of the stomach. *At operation* the surgeon finds the pyloric tumor and sees the secondary changes in the stomach and the collapsed intestine. The biopsy confirms the findings of the necropsy.

Fortunately, in those cases which have come to autopsy and to operation the *clinical story* is known in whole or in part. You are doubtless familiar with this story. It cannot be repeated too often. It should be indelibly fixed on the mind of the medical man, whether he be internist or surgeon. This is the picture, viz: An apparently perfectly healthy child is born; it is breast fed; upon the third or fourth day it vomits. There is perhaps noticed a little lack of appetite. The child does not nurse as vigorously as he should. The lack of appetite is often overlooked. Upon the third or fourth day after birth the mother's breast milk appears in quantity. This may be the occasion, the abundance of milk, for the *vomiting* of the baby having an obstruction at the pylorus. In some 52 cases of pyloric stenosis the average time of the appearance of the vomiting was the seventeenth day of life. The vomiting is not the simple overflow of the full stomach seen so commonly in little babies; it is forcible, expulsive, persistent, obstructive. It is not dependent apparently upon the quality of the food, for variations in diet apparently have little effect. The quantity of the food, however, does have some effect. The baby vomits after a feeding, but he may keep down two or more feedings and then vomit the total feedings. The amount vomited corresponds pretty accurately with the whole amount taken. The child is in some pain after feeding, but is relieved immediately upon vomiting. There are no evidences of nausea. The material vomited is usually the ingested milk. It almost never contains bile. In one case recorded in which bile was present, the operation was postponed, the surgeon thinking that if bile appeared in the vomitus the pylorus must be patent, and that, therefore, food would go through. This child died without operation. Hydrochloric acid is rarely increased in amount. There is usually no hyperacidity. There is no blood in the vomited material. Lactic acid is absent. No catarrhal gastritis is present, certainly in the early stages. *Constipation* is present; little or nothing passes through the pylorus into the duodenum; consequently there is little residue to be passed as a movement. *The dejections* are meconium-like, consisting of epithelial débris, intestinal secretions, altered bile and blood. The meconium-like dejections are very significant. The tongue is clean and moist. The breath is natural and sweet. The child temporarily is hungry and ravenous. There is progressive loss in weight; the child being starved, wastes away. One instance is recorded of a pyloric stenosis in a plump fat child. The attending physician was deceived by the plumpness of the child, operation was postponed and the child died. The temperature is usually subnormal, the pulse is small and weak. At the beginning visible *stomach peristalsis* is noticed as a wave passing from the left to the right. This peristaltic wave passing over the stomach is best seen by placing the child uncovered in a good light immediately after feeding. At a later stage of the disease, when the stomach is very much dilated and has lost its tone, this peristaltic wave is less noticeable and not so readily detected. The epigastrium may be considerably distended by the large stomach. Below the umbilicus the abdomen is sunken and depressed, containing the collapsed intestine. In a large proportion of the cases the *pyloric tumor* is felt. This tumor may easily be concealed by the large liver of the baby and it may be mistaken for an enlarged gland. It is most readily felt one-half inch to the right and three quarters of an inch above the umbilicus. If the abdomen is looked at after a feeding, and palpated as the peristaltic wave reaches the pyloric end of the stomach, the pyloric tumor will be most readily detected. Palpation laterally, as suggested by Carpenter, is often helpful.

Such is the story of this unique pathology: The very characteristic vomiting, the peristaltic wave, the pyloric tumor, the dilated stomach, a tetrad of symptoms occurring in an apparently healthy baby, with a clean tongue and sweet breath, whose bowels are constipated.

Diagnosis. — The typical picture is as described above. There are many variations from this type. Stasis may be complete, as in cases of atresia, or incomplete, as pictured above, or even more complete.

In studying these cases it is important to keep in mind this typical picture of the disease, for the difficulty in diagnosis arises with those cases simulating a partial stenosis of the pylorus. Those cases which simulate stenosis are the so-called cases of persistent dyspepsia, infantile indigestion. Infantile cases of functional gastric disturbance with symptoms suggesting pyloric stenosis are very common. In these doubtful cases, the vomiting will be less regular; it may cease for long periods; it will not be so expulsive; it will be more a regurgitation; the stools will be green and slimy; there may be constipation; there may be diarrhea; the atrophy, the wasting will be slow; there will be no pyloric tumor. These doubtful cases are spoken of by some writers as instances of pyloric spasm. I agree with Cautley that spasm is an assumption on the part of the medical man to explain symptoms. It is an assumed etiological factor. Probably no hypertrophy was ever caused by spasm, although spasm may explain recurrent vomiting. I think the simplest classification of these cases is into two groups: cases of difficult feeding and of true pyloric stenosis. Cases of pyloric stenosis are almost always instances of partial stenosis.

There are certain medical internists who continually strive to antagonize medical and surgical therapeutics. They try to accomplish blindly what surgery attempts to face openly. They would employ electrolysis for stricture of the urethra. They invoke muscle spasm to explain mechanical conditions, then seek to overcome the muscle spasm by small doses of opium. They urgently advocate treatment for secondary indigestion, rather than the removal of the immediate cause of the indigestion, the pyloric obstruction.

Babies with stenosis of the pylorus are *not* suffering ordinarily from dyspepsia or indigestion, but from an obstruction lesion. Medicine cannot cure an obstructive lesion. Surgical therapeutics alone can relieve an obstructive stenosis of the pylorus. To distinguish the ordinary indigestion from the acquired dyspepsia, due to and occasioned by a congenital pyloric stenosis, is, of course, often most difficult.

Prognosis. — The prognosis is apparently hopeless, at least very grave, in cases treated medically. No case is on record which has received medical treatment and has recovered, in which it has been proved that the disease existed. One case only, that of Batten, was treated medically and, dying subsequently of some other lesion, was found to have a partial stenosis. Many cases are treated medically and come to operation and the disease is found. These facts are most significant. Those who, like Heubner, of Berlin, and a few others, believe that all cases should be treated by medical means, have not seen the true pyloric tumor cases. Heubner's facts are unsatisfactory. He probably has seen cases of difficult feeding, but not the cases of true pyloric tumor.

The case reported recently by Morse,[2] Murphy and Wolbach, the specimen from which I will show you later, is unique in medical annals and most significant. It is the only instance in which an autopsy has been secured so long a time following operation upon a case of pyloric infantile stenosis.

It is briefly this: The diagnosis of pyloric tumor was made. At operation the tumor was found. A posterior gastro-enterostomy was done and the child recovered, gaining in flesh and strength and developed for seven months as a normal child; the child then died of no disturbance which could be associated with the stomachic lesion. At autopsy the pyloric tumor was found unchanged, appearing as it was at operation seven months previously. The stoma between the stomach and the intestine was found intact. This is a most unique and remarkable picture. It means that, despite the proper short-circuiting of the obstruction at the pylorus, the pyloric tumor remained unchanged for seven months. This case suggests that probably medical treatment with drugs is unable to effect any material change in the character of the pyloric tumor.

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[2] Boston Med. and Surg. Jour., 1908, clviii, 480.

The *mortality* following operation is bound to be always rather high, for the operation is done upon a weak child and the situation is that of an emergency. In the series of 60 operations studied by Scudder and Quinby, in 1905, the mortality from all operations was found to be 46.6%; in the 135 operations up to 1908 the mortality is found to be 48.8%. The estimated medical mortality of these cases of pyloric tumor is between 80 and 90%.

Treatment. — If the diagnosis is made of a pyloric tumor causing obstruction, whether partial or complete, operation should be done immediately. If the tumor is felt, operation should be done immediately. If the clinical picture is suggestive and is wanting only in the presence of the palpable tumor, operation should be done, provided the baby is losing under skilled feeding. An exploratory operation in doubtful cases that are not doing well may be wise. Two objects are attempted by operation.

1. The overcoming of the obstruction, to meet the emergency of starvation; and

2. The restoration by operation of the intestinal canal, so that it will serve the individual during the remainder of his life.

There are three chosen methods of procedure. *First,* the Loreta operation. In this the stomach is opened and the pylorus is stretched by the introduction into it of a pair of forceps. This procedure has met, apparently, with success in a certain number of cases. I believe that it is a dangerous and unsatisfactory method. *Dangerous* for two reasons:

1. The peritoneum may be ruptured in an inaccessible part where suture will be impossible.

2. Damage to the pyloric mucosa may lead to subsequent ulceration and stricture.

Unsatisfactory, because certain recurring cases have demanded a second operation.

Second: The method of pyloroplasty. This is the operation done most in England. It consists in an incision from the stomach into the duodenum across the pyloric tumor and the suturing this incision so as to increase the lumen of the pylorus. I believe that this operation is unsatisfactory because the parts operated upon are stiff and rigid and not mechanically adapted to the procedure. Moreover, the lumen is not immediately restored but only after twenty-four or forty-eight hours.

The *third* method I believe to be the most satisfactory — the posterior gastro-enterostomy. This is the best method.

The operation of posterior gastro-enterostomy. — The anatomy is so tiny that small and appropriate instruments are to be used.

Before operation. — These little babies will be helped to withstand the shock of operation by a enema of brandy and salt solution. If possible this should be given several times during the twenty-four hours previous to operation. The stomach should be emptied by catheter, even though the baby may have recently vomited. No antiseptics should be used on the baby's skin. The abdomen should be prepared with soap and water applied with a soft piece of gauze; the skin may be washed with alcohol, 70%. If the umbilical cord is not separated or has not healed, special precautions will be required to effectively protect the skin from the suppurating area. This is best accomplished by a cocoon of collodion and cotton, which should completely cover the stem of the umbilical cord. The baby's arms, chest and legs should be separately covered with sheet wadding, held in place by bandages. Warm water bags or bottles should be placed at the baby's feet and sides. All instruments, solutions, assistants, sponges and sutures should be ready before the anesthesia is begun, in order that the baby may be kept under an anesthetic as short a time as possible. Little babies take ether well. Complete anesthesia is necessary, but as soon as it is secured a light anesthesia may be maintained satisfactorily.

The incision should be in the median line, about 3 or 4 in. in length, to the left of the umbilicus. After palpating the pyloric tumor a complete posterior gastro-enterostomy should be done. Only the necessary gentle manipulation of the gut should be made. The mesocolon in these little wasted infants contains no fat and is transparent.

The method of anastomosis should be that followed in adult surgery, namely, the Mayo operation of no-loop at the lowest part of the stomach and opposite to the perpendicular lesser curvature in the pyloric portion. Fine linen should be used in the outer suture, fine chromic gut in the inner suture. Clamps should be used to insure cleanliness and hemostasis. After the anastomosis has been made the parts should be returned to their natural position, with the bowel to the left of the spine. The abdominal wall should be sutured in layers, peritoneum, muscular layer and skin; there will thus be no cutting of sutures or hernia. In placing sutures the vascular and prominent suspensory ligament of the liver should be avoided. The dressing should be held in place by a bandage and not by a swathe; there will thus be no slipping of the dressing.

Immediately after the operation salt solution and brandy may be needed. The child should be placed in the semi-sitting position.

Feeding. — Great difficulty may be experienced in the early post-operative feeding of these little starved babies. It will be wise at first to tentatively feed the baby. Water or whey or mother's milk should be given in small quantities of half a teaspoonful at a time. The quantity may be gradually increased, until after a comparatively few days the baby is taking a half ounce every three hours. Breast milk is the best food.

Hemorrhage. — Occasionally there is bleeding from the abdominal wound; even though it be slight, it may be of considerable importance. Little babies stand hemorrhage poorly. A suture may be placed so as to control this hemorrhage.

I have had one experience with hemorrhage in which, after the third day, a deep suture served to control it.

Vomiting. — Vomiting will occur after operation occasionally for perhaps six or eight days. The vomiting will occur but once or twice a day perhaps, or three or four times a day. The vomiting will be variable in time and amount and will gradually subside.

Hernia. — In the cases here recorded there have been no herniæ. With the abdomen closed by layer suture, hernia is unlikely.

I wish to record the following cases from my own experience with congenital stenosis of the pylorus:

Case No. I.[3] A boy baby, artificially fed, vomited from shortly after birth; lost in weight and strength. Operation was done when fourteen days old. At present he is three years and two months old, his weight is over thirty-three pounds, he is in perfect health. This happens to be the youngest recorded case recovering after operation.

Case No. II.[4] A boy baby, breast fed, vomited soon after birth; lost in weight and strength. Operation was done when twenty-four days old. At present he is three years old and in perfect health.

Case No. III. Patient of Drs. Morse and Day. Reported here for the first time. A boy baby; began to vomit when sixteen days old. This baby was breast fed. Operation was done on the twenty-second day after birth. At present the child is one year and nine months old and is perfectly well.

Case No. IV. Patient of Dr. C. P. Putnam. Reported here for the first time. A boy baby; began to vomit when fourteen days old. A breast-fed and artificially fed baby. When twenty-five days old, operation was done. At present he is eight months old, and in perfect health.

Case No. V. Reported here for the first time. A baby about three weeks old, who was evidently not going to live but a few hours, so operative treatment was refused. At a subsequent autopsy the stomach and duodenum were obtained. The pylorus presented the characteristic tumor.

Case No. VI. A patient of Dr. Morse. Reported here for the first time. A baby, seven days old, who vomited on the third day. Because of the persistence of the vomiting and the rapid failing of the child operation was done when he was seven days old. The operation discovered no pyloric tumor nor any pathological lesion of the stomach. Recovery from the operation was uneventful. The child was most difficult to feed for a time subsequently, but now, a year and five months after the operation, the child is well.

Sufficient time has now elapsed since operative treatment was instituted for pyloric infantile stenosis so that a few results some years after operation are known.

These cases which I have just related were operated upon three years and two months, three years, one year and nine months and eight months ago, respectively.

All these cases are well and strong and apparently are healthy children.

Gastro-enterostomy in adults was undertaken originally in order to overcome an obstruction at the pylorus. Observations of Katzenstein and Joslin and others make it probable that the gastro-enterostomy causes certain definite changes to take place in digestion. These facts are interesting in connection with gastro-enterostomy in little babies. These cases of gastro-enterostomy in infancy serve as experiments in metabolism. Whereas I know of no careful chemical analyses of ingesta and egesta, yet the good health and apparent good nutrition of these babies subsequent to the operation would lead one to suppose that nutrition is not impaired, but remains good. These cases of gastro-enterostomy following pyloric stenosis in infancy stand, therefore, as evidence for the opinion that gastro-enterostomy is not harmful, but that it has secured for these individuals not only a tiding over of the threatened starvation, but has actually been no impediment or hindrance to good nutrition.

These surgical experiments upon the practically healthy living child are final, despite laboratory findings.

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[3] Boston Med. and Surg. Jour., Dec. 14, 1905.
[4] *Ibid.:* Feb. 22, 1906.

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THE TONSILS AND THEIR RELATION TO THE GENERAL HEALTH.*

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The subject for which your attention is requested to-night is one which is connected either as a direct cause or as a port of entry of a large percentage of all cases met with in general practice.

The tonsils, two faucial and one pharyngeal, are what are known as compound lymphatic glands and form, in conjunction with other lymph follicles situated between them and on the base of the tongue, an uninterrupted circle of lymphoid tissue around the pharynx. The faucial tonsils, when normal in size, do not project beyond the inner borders of the anterior and posterior pillars of the pharynx, between which they are situated. Each consists of from ten to eighteen lymph follicles covered with a reflection of the oral epithelium, which, dipping in between the follicles, forms the lacunæ or crypts. These ten to eighteen crypts vary in size, the upper ones often extending to the base of the organ, with spacious canals into which many mucous glands situated around the follicles pour their secretion to mix with epithelium, lymphoid cells, fat molecules, bacteria and particles of decomposed food. A triangular space bounded by the anterior and posterior pillars on each side, with the upper surface of the tonsil below for its base, is known as the supra-tonsillar space, into which the larger crypts empty and where quinsy sore throat often begins.

Luschka's tonsil, situated in the vault of the pharynx, usually contains a greater proportion of lymphoid tissue than do the faucial tonsils and is, therefore, more spongy in texture. It is usually enlarged whenever the others are. Lymphoid tissue on the base of the tongue is often hypertrophied, especially late in life, and that on the back of the pharynx, when covered with an exudate, has more than once with tonsillitis been the cause of an unnecessary injection of antitoxin — with no harm done, however. The arterial supply of the faucial tonsils is rather generous, consisting of the tonsillar and palatine branches of the facial artery, the ascending pharyngeal, the descending palatine branch of the internal maxillary, a twig from the small meningeal, and the dorsalis linguæ from the lingual artery.

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*Read before the Norfolk District Medical Society, Nov. 26, 1907.

The internal and external carotids are from $\frac{1}{2}$ to $\frac{3}{4}$ inch respectively external and posterior to its lateral edges, and are in no danger of being cut in tonsillectomy.

The tonsils have a rich lymphatic supply which plays a very important part in disseminating infection to and through the neighboring glands. It has been shown that tuberculosis can travel on account of the anastomosis between the tonsils, cervical and subclavian glands directly to the apex of the lung, and, moreover, this does actually happen.

The lymphatics of the gums, hard and soft palates, extend to the pharynx, often crossing to the opposite side, which explains an enlarged right cervical or submaxillary gland from a carious tooth on the left side of the jaw, and their trunks, with those from the base of the tongue and tonsils, empty into those glands next to the thyrohyoid ligament. Others pass backwards in conjunction with some from the nose, Eustachian tubes, upper posterior surface of the soft palate and Luschka's tonsil to the lymphatic glands on the ventral surface of the cervical vertebrae, infection of which leads to something not especially common, but often fatal, retro-pharyngeal abscess.

The uvula and anterior surface of the soft palate, as you would know from the ease with which they tend to become edematous, are very rich in lymphatic vessels and empty through the pillars of the fauces principally into the deep glands in the bifurcation of the common carotid.

And so one can easily see how extensive or distant may become a localized infection involving any of the tissues of the naso-pharynx, which leads me to remark that it is unfortunate that the average dentist does not use a little more intelligence and courage in dealing with carious processes of the teeth and jaws. More than once, out of town, I have pulled ulcerated teeth which the dentist refused to extract, and more than once I have broken them when he might not have.

The tonsils receive their nerve supply from the glosso-pharyngeal and Meckel's ganglion. An important structure lying above and a little posterior to the tonsil is the Eustachian tube, pressure upon which by an enlarged or infected tonsil causes temporary or permanent deafness and tinnitus.

A special function of this tissue has long been sought for, but so far as is yet known it is the same as that of other lymphatic glands, namely, guarding the tissues against bacterial invasions, and there is no doubt that more business comes to it than it can properly attend to. It has besides a general mucous secretion which acts as a diluent to the food, the secretion being emptied from the crypts into the throat by compression in the act of swallowing.

But just as armies instituted primarily as a protection against war may become a *causa belli*, so these intended guardians in the throat may and do become a cause of war and destruction in the health of the human constitution from associations with such abnormal conditions as the following: dust, dirt and darkness of unhealthful living and sleeping rooms, smoke, sulphur dioxid and other gases of cities and ill-ventilated houses, toxins from decomposed food, constipation and other digestive disturbances, inflammation from such general infections as scarlet fever and measles, and local infections such as suppurative processes of the teeth, middle ear and nasal cavities.

The adenoids are in a direct path of the air currents of respiration, and intercept by and upon their moist mucous surface elements of respiration foreign to its purity. These substances becoming imbedded naturally irritate and inflame the adenoid tissue, and chronic inflammation is the sequence. Inflammation is the normal process of repair, and the enlarging tonsils show that not only are dangerous foes seeking entrance through the walls of the crypts, but that the hypertrophying tissues are capable of building up some though inadequate defense.

Like the Spartans of old at Thermopylæ, these three tonsils defend the narrow passes into the lungs and general circulation, but unlike those old soldiers, they prefer to be living cowards rather than dead heroes, and with too great odds against them, they surrender and join the forces of the enemy, furnishing intrenchments to the most diverse, dangerous and deadly foes of the human tissues, which will be rollcalled later. Should they be sentenced to the tonsillar guillotine? Let us try them and decide on the evidence.

Tonsils and adenoids have hypertrophied not alone recently, but for centuries, and an article on the subject, which to-day remains classical, was written in 1828.

The cause cannot always be traced to the conditions before mentioned. Some of the worst cases I have ever seen have been in the town of Hull, which is surrounded by the ocean on three sides.

Although there is at puberty a slight general lymphoid tissue atrophy, that the tonsils *markedly* shrink, the reader denies. The upper respiratory passages enlarge and some of the mechanical symptoms lessen, but the *diseased* tissue still remains.

What are some of the anatomical changes produced by hypertrophy of this lymphoid ring? The earlier the growths appear the greater will be the changes, as the nasopharynx in infancy is long and narrow, with very small openings from the posterior nares, stated by Morse to be no larger at birth than a medium-sized male catheter. Small growths will at this age obstruct the small air passages. Adenoids are at this period common and demand treatment more than at any later stage, as the damage wrought in deformities, defects and disease is more than at any later age. They are easily and quickly removed without danger. Broadening of the bridge of the nose with collapse of the alæ nasæ; V-shaped contraction of the upper jaw, with deformities of the teeth and raising of the hard palate; chronic inflammation of the nasal mucous membrane and hyperplasia of the turbinates; deformities of the thorax, such as pigeon breast, with Harrison's lateral sulcus at the attachment of the diaphragm; barrel-shaped chest and rickets are some of the anatomical and pathological changes. Acute and chronic otitis media, dry inflammation of the middle ear and deaf-mutism are other changes. Mechanical disturbances, such as snuffles, and these growths are the most common cause of snuffles; acute and chronic catarrh of the nose, pharynx, tonsils, bronchial tubes, deficient aëration of the blood with the sequences (such as anemia, sub-development in size and weight), snoring, choking and coughing during sleep, inability of infants to properly suckle, thick nasal voice and deafness are common. Intellectual, nervous and reflex disorders are as follows: nightmares, broken sleep, epileptiform convulsions, listlessness, stupidity, loss of memory, stammering, hay fever, asthma, cough, croup and laryngismus stridulus. One other that I wish to mention especially is the nocturnal incontinence of urine. Those who have never observed it will be surprised to see the results obtained by the removal of the enlarged tonsils and adenoids which so often co-exist with enuresis. I could report from my own records several cases with excellent and immediate results.

We now come to a class of diseases originating through diseased lymphoid tissue of the naso-pharynx which is the most serious, namely, those of bacterial origin, the bacteria gaining access to the general system through and on account of the abnormal condition of these glands; although to the naked eye, unfortunately, the glands before removal may not indicate by abnormal size or contour the presence of disease in their interior, cervical adenitis, perhaps, giving the only clue.

First, and probably most important, is acute rheumatic fever. This disease, as was stated by Wagner in 1878, too often follows tonsillitis to be a mere coincidence. According to St. Clair Thompson, from 30% to 80% of all attacks of this infection begins with tonsillitis, and the researches of careful throat students and investigators of acute rheumatic fever are tending more and more toward the conclusion that most, if not all, attacks of this infection start with the bacteria in the tonsils, the latter offering in many cases no defense in the form of a local reaction to the organism, which is probably the diplococcus rheumaticus. We know also that in children the most important and often the only obtainable symptom of this disease is endo- or pericarditis, and, therefore, no doubt, many of the heart lesions with indefinite history received their infection from the tonsils. Practically all of the valvular lesions following diphtheria begin here.

Another infection, the germ of which is probably closely allied to that of acute rheumatic fever and found to begin in the tonsils (and probably only so), is erythema nodosum.

I have before reported from my records a case which I saw with a history, two weeks previous, of acute tonsillitis. Mild temperature and joint symptoms with nodules and purpuric hemorrhages, lasting for two weeks or so, were the principal symptoms. Chorea, most cases of which the English investigators especially, and other schools, are tending to classify under acute rheumatic fever, is, therefore, often at least, secondary to abnormalities of the naso-pharynx.

The second most important germ disease having its headquarters in one of the three tonsils is tuberculosis. It has been before mentioned that the lymphatic chain of glands may and do furnish a direct route to the apices of the lungs from the tonsils, or indirectly through the general circulation the germ may be deposited in the lung, joint or any other organ of the body. Where do all the joint cases come from when the primary infection cannot be traced to the lungs, especially when the tonsils are found tuberculous in about 6% to 8% of those removed? Of 760 tonsillar operations compiled by Grüber, 6% were tuberculous, and of 232 cases operated on by Robertson 8% were, and in 75% of these cases the crypts emptying into the supra-tonsillar fossa were the ones furnishing the infection, which suggests that this part of the tonsil, often submerged, must not be left unremoved.

Tuberculous meningitis has more than once been demonstrated to have had its birth in the pharyngeal tonsil, as has also tuberculosis of the middle ear. In 29 autopsies on cases of epidemic cerebrospinal meningitis investigated by Westenhoeffer under the direction of the German government to discover the mode of infection, the pharyngeal tonsil was found in every instance swollen and edematous and full of purulent material. One or both ears were involved in 65.5% of the cases. The sphenoid sinuses were affected in 35.5% and the maxillary sinuses in 26.6% of the cases. The cribriform plate of the ethmoid was not once involved.

The severe and fatal cases of acute streptococcus infection beginning in the tonsils, with extremely high temperature and rapid prostrations, are not easily forgotten by those of us who have been unfortunate enough to have treated them. They may end in death before pus can be located and evacuated, as unfortunately happened to one of our colleagues in Boston a few years ago.

Staphylococcus and pneumococcus infections from the tonsils begin in the same way and may also be very severe, and acne and boils should suggest the former.

In September last, I removed two large diseased tonsils from a patient fifty-nine years old, who had been suffering from recurrent attacks of acute tenosynovitis, preceded by an uncomfortable throat. This metastasis to the tendon sheaths from the tonsils is not rare and when occurring over joints is often mistaken for so-called acute articular rheumatism, the redness, pain on motion and temperature offering a somewhat similar picture.

Fourteen cases of acute phlegmonous appendicitis associated with or preceded by acute tonsillitis, with the post-mortem findings in all, are reported by Professor Kretz, of Vienna. All were first attacks, occurring in young persons, and in all the cases streptococci were found predominating in the appendix, peritoneal exudate, and in the tonsils and lymph nodes. The route of infection from the microscopical findings was probably through the general circulation, and the lymphatic follicles of the appendix, cecum and ileum appeared to be the beginning centers of the pyogenic inflammation. Others besides Kretz have taught that appendicitis is sometimes secondary to general infection starting in the throat, and Kretz believes that one third of all fatal pyogenic infections begin with an angina, and to Semmelweis he gives credit as first to show that many apparently similar inflammations, such as arthritis, osteomyelitis, acute endo- and pericarditis, and acute inflammations of other serous membranes belong together as having a common origin, — acute angina.

Deaths from acute nephritis in children following infection of the kidney from the tonsils have recently been brought to our attention by different writers, and acute septic infarcts of the kidney may also often originate in this tonsillar tissue.

Retropharyngeal abscess is another form of bacterial infection often secondary to diseased lymphoid tissue in the nasopharynx. One of the glands, sometimes more than one, on either side of the cervical vertebræ, breaks down, and unless opened, is often fatal, usually so in infancy. It may start high up back of the soft palate, or low down back of the tongue or tonsil, when it is hard to diagnose and unfortunately (we are told) is seldom done in infants by the general practitioner. Palpation as well as sight is often necessary to discover it.

Throat and orthopedic men are advising the removal of even healthy-looking tonsils in joint infections of undiscoverable cause, especially if cervical adenitis co-exists, and in some cases they are rewarded by finding small pockets of pus in the tonsil.

The symptoms of hypertrophied lymphoid tissue of the naso-pharynx are all the conditions previously mentioned. It should be remembered that an infant breathes through its nose if possible while sleeping, in spite of fair-sized growths. Adenoids in older children and adults can usually be seen with the throat mirror. In younger patients forward bulging of the soft palate may indicate their presence, or the introduction of the finger may be necessary unless enlarged tonsils are present, when it is unnecessary to look for them until the time of the operation; which brings us to the verdict as to what shall be done with them.

Astringent shrinking treatment will be mentioned only to be condemned. Removal of the cause by surgical procedure is naturally the only efficient and safe means of getting rid of the diseased tissue. We are removing them, not only because they are enlarged, but because they are a *fons et origo* of various infections.

Regarding the technic of the operation, I have only to say, don't leave any of the growths. Then the symptoms caused by them will clear up and the growths won't recur. Asthma is especially reluctant to disappear while any of the cause for its existence remains, and in adults it is sometimes cured quickly and entirely only by the cutting or burning out of the lymphatic follicles on the base of the tongue enlarged from the absorption of pollen or other poisons.

My only serious case of hemorrhage was in the before-mentioned patient fifty-nine years of age, with probably some arteriosclerosis, which I was unable to locate, however, until after the tonsillectomies. It was very apparent then for about ten hours, and although the patient recovered, I should consider well before operating on a similar case. One should never start the operation without being prepared to do a tracheotomy on account of the slight danger of blood clot or adenoid growth getting into the larynx.

In spite of your careful and convincing explanations of the dangers of diseased tonsils and adenoids, and in spite of your conscientious advice for their removal, a certain percentage of your patients whose health and even life is menaced by them will still refuse operation. Those cases can at least be benefited by the free use of tonsil knives introduced into the crypts and pushed through and out of other crypts. This will evacuate the contents of the lacunæ, avert abscess formation, such as quinsy, and also perhaps acute and chronic general infection, and it will, besides, by breaking several distended crypts into one, cause the tonsil to shrink in some cases to almost normal size. Cocain should be freely used within the crypts and on the surface before cutting, as the organs when distended and inflamed are rather sensitive to this treatment. After the crypts have been evacuated of their calcareous or decomposed and foul-smelling contents, tincture of iodin should be thoroughly applied to destroy the secreting surface within the crypts. In some patients fifteen to thirty of these yellow plugs of chronic lacunar tonsillitis will be found on careful observation. I have emptied as many as twenty-one in one patient, but when so many are present it is best to do only a few at a time.

The results of exploring and incising an apparently healthy-looking tonsil with these knives are surprising, but one should never substitute this office operation for a tonsillectomy unless there is a proper contra-indication for complete removal.

A point in the treatment of acute tonsillitis which should never be omitted is the administering, always, of full doses of sodium salicylate, by means of which an attack of acute rheumatic fever may be cut short and a severe heart lesion averted or favorably modified.

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THE DEMONSTRATION OF THE SPIROCHETA PALLIDA BY THE METHOD OF DARK FIELD ILLUMINATION.

BY WILLIAM C. QUINDY, M.D., BOSTON.

DURING the past two years so many observers have been able to find the spirocheta pallida in syphilitic lesions of all sorts that this organism, although not yet grown in pure culture, is regarded by nearly all authorities as the true causative agent of this disease. Indeed, failure to demonstrate this spirocheta in an undoubtedly syphilitic lesion is to-day regarded, not as proof that it is absent, but as the fault of the method employed.

The differentiation of the pallida from most other spirochetæ is easy, there being only one or two with which it may be confused, such as the sp. refringens and the sp. dentium. The pallida is a very delicate organism, with slight refractile power, of corkscrew-like form. Its twists are steep, short and regular, becoming less high toward the ends, thus giving a pointed form. Its motion is of three sorts: rotation on the longitudinal axis, backward and forward swaying, and bending. The spiral twists are retained during motion. It is with difficulty stained. Most other spirochetæ are coarser, with broader, flatter and more irregular twists, and are easily stained.

In tabular form these differences are as follows:

A very valuable addition to the various methods at our command for the demonstration of the spirocheta pallida is the microscopical observation of it in a motile state by means of the so-called "dark field illumination." Although this arrangement of the microscope has been used by bacteriologists for a number of years, it has recently been made much easier by the *paraboloid condensor* of Siedentopf. This condensor, taking the place of the usual Abbé condensor in the substage of the microscope, overcomes several of the optical errors accompanying the older methods. Briefly stated, the results obtained by this condensor are nearly the converse of those present when the microscope is used in the usual manner. With the ordinary method one sees the field uniformly illuminated, and all interposed objects appear as more or less dark bodies on this field. By the method under consideration, however, the field is black, or nearly so, while interposed objects appear luminous and refractile. This is due to the fact that the only light which enters the objective is that thrown into it by bodies denser than their surrounding medium. By this means motile organisms show with great clearness.

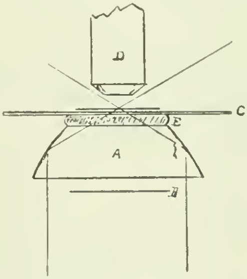

FIG. 1. *A.* Paraboloid condenser. *B.* Central diaphragm excluding all but peripheral rays. *C.* Slide with cover slip. *D.* Dry lens of high power. *E.* Cedar oil between condenser and slide. Note that the light rays fall outside the objective when not refracted into it by some object beneath the cover slip.

Since the light rays must have their point of total refraction at the surface of the cover slip, the space between condensor and slide is filled with cedar oil. i. e., the condensor is "immersed." A dry lens of high power is used in the objective. Ordinary daylight being too diffuse and of insufficient intensity, illumination is best derived from either an arc lamp or an incandescent light of fifty or more candle-power. The light from this source is brought to a focus just in front of the substage mirror by a system of condensing lenses of short focal length. By this means the distance from light to microscope is brought within the limits of the ordinary table or desk.

	Pallida.	Refringens.	Dentium.
Occurrence,	Syphilitic lesions.	Genitalia.	Mouth.
Refractive power,	Slight.	Most.	Least.
Length,	4–20 μ.	10–30 μ.	4–12 μ.
Thickness,	$\frac{1}{4}\ \mu$.	$\frac{1}{2}$–$\frac{3}{4}\ \mu$.	$\frac{1}{4}\ \mu$.
Motion,	Slowest, bends.	Most rapid, does not bend.	Slow, principally rotation.
Twists,	Regular, steep, short. Persist during motion.	Irregular, broad, flat. Often lost during motion.	Regular, short, flat. Persist during motion.
Takes stain,	Slightly.	Easily.	Easily, but pale.

Technic of preparation of slide. — In preparing the slide for examination, the two main endeavors are, firstly, to be as sure as possible that spirochetæ have been abstracted from the lesion under inspection, if they be present, and secondly, to carry to the slide but few pus cells, blood corpuscles and extraneous matter. The various methods of obtaining material, as given by Beer, are as follows: (1) Wash the lesion with salt solution and rub its surface with the platinum loop till serum exudes. (2) Scrape with a small sharp curette. (3) Incise and examine the serum which flows. (4) Examination of macerated material obtained by excision. (5) Examination of material obtained by puncture of satellite gland by the hollow needle. Numbers 1, 3 and 5 are most suited to the dark field investigation.

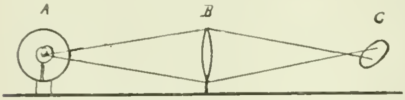

Fig. 2. Illumination. *A*. Incandescent light of 50 to 80 candle-power. *B*. Condensing lens in stand. *C*. Mirror of microscope.

Of these the writer has had experience only with those methods described under numbers 1 and 3. Neither of these has been as satisfactory as when the material has been obtained by *suction* either with or without previous incision, according to the nature of the lesion. This has been accomplished by means of a metal syringe with solid, well-fitting piston, connected by a short piece of thick-walled rubber tubing to a glass rod, the end of which has been expanded somewhat in the shape of a "blunderbuss." Such glass rods should have a comparatively thick wall, and small lumen of about 2 or 3 mm. Their length should be from 6 to 12 cm., the longer ones being used to reach areas in the oropharynx. The most convenient size of syringe is one of about 20 to 30 ccm. capacity. By applying the end of the glass rod firmly to the lesion and withdrawing the piston one gets a similar action to that of the dry cup. Sufficient serum having thus been obtained, the rod is removed from the rubber tubing and a few drops of water or salt solution are allowed to run through it by means of a medicine dropper. These are collected on the slide, and the water and serum well mixed by stirring with the end of the rod. A cover slip is laid on, and the slide is ready for examination. Care should be taken not to use an excess of water, as this leads to soiling of the fingers and microscope stage.

Since the spirochetæ vary extensively in number, according to the nature and age of the lesion, at least four slides should be prepared and searched before they are declared absent. They are most numerous in secondary lesions, while in primary lesions the earlier the examination, the easier is the organism demonstrated. Antiluetic treatment does not appear to change its morphology. The presence of some blood in the slide is of aid, as the corpuscle, in freshly made specimens, affords a measure of known size with which to compare the spirocheta.

Although familiarity with the appearance of the pallida in the dark field makes its recognition quite certain, it will be found advisable in some instances to examine the organism in the stained specimen. This is best done by means of Wright's stain applied from thirty to forty-five minutes, followed by only slight washing with water. The Giemsa stain is also of value. It is easier to overlook the organism in the stained specimen, however, than when it is sought in its motile state.

CONCLUSIONS.

1. It should be a routine practice to examine all suspicious lesions for the spirocheta pallida.

2. The organism has a definite morphology and can be differentiated from other spirochetæ by careful microscopical examination.

3. This is best done by the method of dark field illumination, with or without subsequent examination of a stained specimen.

4. Since the organisms are not always numerous on the surface of the lesion, the method of obtaining them is of importance. A most satisfactory way is that of suction as described above, and the case should not be pronounced negative until some such method has been used.

The writer wishes to extend thanks to Drs. H. C. Ernst, J. H. Wright and S. B. Wolbach, for kind aid in the microscopical portion of this subject, as well as to Drs. Abner Post and C. M. Smith for their courtesy in supplying the clinical material.

The condensor is manufactured by both Zeiss and Reichert and may be obtained through their American agents.

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Reports of Societies.

AMERICAN GASTRO-ENTEROLOGICAL ASSOCIATION.

The eleventh annual meeting was held at the Auditorium Hotel, Chicago, Ill., June 1 and 2, 1908, the President, Dr. John P. Sawyer, of Cleveland, in the chair.

THE PRESIDENT'S ADDRESS.

Dr. Sawyer, in his opening address, briefly reviewed the work of the Association during the past year and called attention to the fact that its membership was composed of surgeons, pathologists, physiologists and internists, and that such a composite membership could not but result in broad discussion and in an eliminative consideration of the ideas presented. The greatest difference of opinion among the clinical men was now found in the question of operation. No field presented more gratifying results to either operator or internist, when their efforts were crowned with success, than the material here offered. Between the two there existed a marked divergence of opinion as to the choice of procedure. When, unfortunately for the truth, some operator, no matter how prominent, made the formal statement that every case of lasting dyspepsia was a case for operation, at least by gastro-enterostomy, the critical judgment of that man was discredited. When, on the other hand, an internist stubbornly cherished his reluctance to operation and exhausted the vitality of his patient in a fruitless reliance on non-operative measures, we must regretfully assent to the forceful comments of the operator whose statistics had suffered. In no other field is the statistical method so justifying and so little convincing. That an operation can be done and with very little mortality is not reason enough that it should be done. In deciding upon the advisability of an operation the surgeon should consider not so much the length of time that the patient had been under medical treatment, but how well it was carried out. Favorable statistics of unnecessary operations speak not so much for earlier surgical intervention as for better treatment by the practitioner, based on a keener realization of the conditions present. A better knowledge of physiology and pathology, a clearer insight into cause and effect, more refined diagnoses and less satisfaction with present methods are conditions in professional thought which, when realized, will work a vast change in the statistical compilations of the future.

ISCHOCHYMIA.

Dr. Frank Hall Murdoch, of Pittsburg, in this paper, defined ischochymia, according to Einhorn, as an affection characterized by the constant presence of food in the stomach, even in the fasting state. It might be acute or chronic. Whether acute ischochymia, or acute dilatation of the stomach, as it was termed by Boaz, Hunter and others, was due to a paralysis of the gastric muscles, or to a spasmodic contraction, or to both, was as yet undecided. It was usually brought on by some gross error in diet, though it occasionally followed chloroform anesthesia. Out of 64 cases known, 47 proved fatal. Of the total number of cases, 29 followed chloroform anesthesia, and in 11 of these the operation had not involved the abdomen but was at points remote from it. The chronic form was caused (1) by mechanical obstruction of the pylorus; (2) by absolute or relative weakness of the expulsive forces; in other words, atonic conditions of the muscularis. Usually, in ischochymia resulting from stenosis of the pylorus, only the coarser particles of food were found in the stomach in the morning before the patient had eaten anything, the finer particles and the liquid contents having passed into the intestine. On the other hand, where stagnation of food was due to atony of the gastric musculature, the coarser particles of food would pass through the pylorus, and only a small quantity of the finer particles would be found in the stomach in the morning before the patient had taken any food. In the treatment of ischochymia due to mechanical obstruction of the pylorus, surgical interference was demanded if the obstruction was due to malign stenosis, to benign stenosis of high degree which would not yield to medical treatment, to adhesions of the pylorus to neighboring organs, to cicatricial bands, or to tumors which by pressure obstructed the outlet of the stomach. Formerly, operation was considered necessary in all cases of benign stenosis of the pylorus, of whatever degree, but now we know that such was not the case, for under proper medical treatment, including diet and lavage, many patients entirely recovered.

Dr. G. W. McCaskey, of Fort Wayne, said he had been convinced for years that in many cases in which the food remained in the stomach long enough to constitute a pathological condition which would justify the diagnosis of ischochymia, the presence of an actual stenosis was pure presumption unless the condition had been demonstrated by surgical interference or at autopsy.

Dr. Max Einhorn, of New York, said there were cases of stenosis of the pylorus that could be successfully treated medicinally. We might have to deal with an inflammatory condition about the pylorus, with edema, — in other words, with a temporary stenosis,— and with the subsidence of this there was a return to normal conditions. This might be a predisposing factor in the causation of a greater or lesser degree of stenosis of the pylorus.

Dr. Franklin W. White, of Boston, said he did not believe that we could make the distinction between the two kinds of benign stasis, atonic and obstructive, by the character of the gastric contents. In both of the classes of cases mentioned, the stomach contents were apt to be of the same character.

Dr. Henry Wald Bettmann, of Cincinnati, said the important point was to determine whether the stomach was able to propel the food through the pylorus in sufficient amount to properly nourish the patient. The greatest single advance that had been made in the treatment of ischochymia was that of Kussmaul, in 1868, when he introduced the stomach tube into clinical medicine, and he subsequently reported a number of cases of very advanced stenosis of the pylorus which were relieved by gastric lavage. Most of them were so far advanced that to-day they would doubtless be turned over to the surgeon for relief, and Kussmaul, in his original article, expressed the hope that in the future some surgeon would be found bold enough to operate in such cases.

Dr. Alfred D. Kohn, of Chicago, said we should carefully select our cases before advocating gastro-enterostomy. It had been the experience of many surgeons and internists that gastro-enterostomy for benign stenosis, so-called, was done rather indiscriminately, and was frequently followed by fatal ulcers of the jejunum. In cases where hyperchlorhydria existed, and an immediate operation was absolutely essential, it would be advisable to resort to a preliminary jejunostomy until the urgent symptoms had cleared up.

Dr. John A. Lichty, of Pittsburg, said that while his experience with gastro-enterostomy in these cases had been very satisfactory, and while the mortality of the operation was very low, he did not believe the operation would stand the final test in these cases, and that it would in time be supplanted by a more satisfactory procedure. The operation that should be done to relieve this condition was pyloroplasty, and when the surgeons became more familiar with the technic of that operation, he believed the death-rate following it would be no higher than that of gastro-enterostomy.

Dr. J. C. Johnson, of Atlanta, thought there was something distinctive about ischochymia which could not be altogether explained by the degree of stenosis or the degree of impairment of the gastric musculature, and we should always be very guarded in making our diagnosis.

Dr. John P. Sawyer, of Cleveland, mentioned a case coming under his observation which bore upon the observation of Dr. Einhorn that mechanical obstruction need not be present in connection with ischochymia.

A NEW METHOD OF ESTIMATING THE PERMEABILITY OF THE PYLORUS, AND AN ATTEMPT OF TESTING THE PANCREATIC FUNCTION DIRECTLY.

Dr. Max Einhorn, of New York, after stating that the methods ordinarily used for estimating the permeability of the pylorus were based principally upon examinations of the motor function, or rather, prochoresis, of the stomach, said the idea presented itself of having beads of different sizes attached to a silk thread and having them swallowed in order to see whether they passed the pylorus or not. In normal conditions they would pass; in stenosis they would remain in the stomach. As the length of the thread in itself was not a sufficient guide to decide whether the bead was in the duodenum or not, we had to look for a different indicator for that purpose. In the beginning, Dr. Einhorn said, he used beads coated with mutton tallow; later, beads with filled methylene blue and coated with mutton tallow. As the fat was dissolved mainly in the duodenum, a green or blue color of the urine would show that the bead had already passed the pylorus. This occurred in from three to five hours. If we then withdrew the bead, we would find that it was empty, containing neither fat nor methylene blue. In order to be sure, however, that the disappearance of the fat and methylene blue really occurred in the duodenum and not in the stomach, he tied another similar bead for control purposes to the thread at a distance of 50 cm. from the lips. This bead could only reach the stomach, whereas the original bead was tied at a distance of 75 cm. from the lips and could, therefore, pass the pylorus and travel for a distance in the duodenum. If, therefore, the distant bead was empty, whereas the proximal bead was still filled, it would prove that the lower bead had passed the pylorus. In some cases of pyloric stenosis, both beads remained full.

For the purpose of testing the pancreatic function, Dr. Einhorn had constructed a duodenal bucket, on the same principle as the stomach bucket, but much smaller. This bucket, tied to a long string of braided silk, with a mark at 75 cm., was placed in a gelatine capsule and given about one hour after a small meal. It was left in the digestive tract for three hours without taking any more food. The thread was tied to the patient's ear, or fastened in some other manner, so that it could not go beyond the 75 ccm. mark. After three hours the thread was slowly withdrawn. In many cases we could feel a slight resistance as the bucket passed the pylorus, the cardiac end usually offering no resistance. At the entrance of the esophagus the resistance was overcome by having the patient swallow once before withdrawing the bucket. It was still better to have the patient swallow the bucket before retiring and withdraw it in the morning in the fasting condition. Usually, the bucket returned full. Its contents might be removed by means of a pipette and placed in a small porcelain dish. The contents usually looked yellowish, owing to the admixture of bile, and yielded a neutral or faintly acid reaction, without the presence of free hydrochloric acid. Only in one case of grave hyperchlorhydria, after an old ulcer of the stomach, was free hydrochloric acid found in the yellowish fluid. That the duodenal bucket entered really the duodenum might be seen, first, from its contents; second, from a Röntgen ray picture taken before removing the bucket. The duodenal bucket could, of course, also be used for testing the permeability of the pylorus. The test described here, however, would be of benefit principally in those cases in which there was any doubt whether regurgitation had taken place from the duodenum into the stomach.

Dr. Fenton B. Turck, of Chicago, said that attempts to explore and determine the condition of the stomach and duodenum with the aid of capsules had proved of the greatest service to him in his work, and for many years he had worked along lines similar to those described by the reader of the paper.

Dr. G. W. McCaskey, of Fort Wayne, said that in regard to the tests with thymus gland, while a positive result would be of great value, a negative result would be of no value in determining the absence of pancreatic disease. We might have a carcinoma involving one half of the pancreas and still have enough pancreatic juice left to carry on digestion.

The discussion was continued by **Drs. Charles D. Aaron**, of Detroit, and **Walter B. Cannon**, of Boston, and was closed by **Dr. Einhorn**.

AN EXPLANATION OF THE MOTOR ACTIVITIES OF THE ALIMENTARY CANAL IN TERMS OF THE MYENTERIC REFLEX.

By **Dr. Walter B. Cannon**, of Boston. The author stated that the reflex for the intestine — contraction above and relaxation below a stimulated point — was also proved true of the stomach and of the lower esophagus. The cardiac and pyloric sphincters obeyed the same reflex. The alimentary canal was, therefore, a unity, made orderly by the local reflex in the myenteric plexus. Evidence was at hand indicating a reversal of this reflex in states of increasing or high tonus. About a year ago, Dr. Cannon said, he showed that the presence of acid in the stomach stimulated the opening of the pylorus, while the presence of acid in the duodenum closed the pylorus and prevented the outflow of food from the stomach. Since that time he had made some observations, the details of which were still unpublished, in regard to the control of the cardiac sphincter of the stomach, and those observations indicated that the cardiac sphincter likewise obeyed this law, namely, that the presence of acid in the stomach normally kept the cardiac sphincter closed during digestion, and that the stimulation below caused the contraction above. The cardiac and pyloric sphincters, therefore, obeyed the same law as that prevailing in the intestines.

Dr. Cannon's paper was discussed by **Drs. Max Einhorn**, of New York; **J. C. Johnson**, of Atlanta; **J. A. Lichty**, of Pittsburg, and **Fenton B. Turck**, of Chicago. Dr. Cannon, in closing, said that the observation that the closure of the pyloric orifice was due to the presence of acid in the duodenum could not be ascribed entirely to him. Hirsch, about fifteen years ago, observed that when acid was introduced into the duodenum there was a cessation of discharge from the stomach. No proof was given, however, that the effect was on the pylorus. Indeed, the result had been attributed to the effect of the acid on the peristaltic movements of the stomach. It was not until the x-ray was introduced that we could differentiate between these two factors of gastric discharge.

PLASTIC PERITONITIS.

Dr. G. W. McCaskey, of Fort Wayne, reported this case in detail, and showed the specimen. The patient was a man about thirty-five years old, who consulted Dr. McCaskey about a year ago on account of persistent vomiting, abdominal pain and general debility. The pain was in the lower half of the abdomen, principally in the right lower quadrant. A diagnosis of appendicitis had been made by a physician in his home town. The vomiting of which he complained was irregular in character; it sometimes occurred after eating, and sometimes without reference to meals, and it had been going on for some months. The vomitus was always of a greenish color; this did not resemble bile, but had the appearance of the pigment produced by the bacillus pyocyaneus. The man's temperature remained normal, even perhaps sub-normal, until just before his death. The pulse was also substantially normal. An analysis of the stomach contents showed a normal amount of hydrochloric acid. Dr. McCaskey examined the greenish pigment in the vomitus and found what he thought to be the bacillus pyocyaneus. It was turned over to Dr. B. W. Rhamy, and the only conclusion he could reach was that it was Eberth's bacillus. The patient was finally turned over to Dr. Miles F. Porter, of Fort Wayne, for exploratory operation, with the provisional diagnosis of plastic peritonitis, although no one had any conception at the time of the real pathological condition, as found at autopsy. The operation showed that the intestines were matted together in a peculiar way. It was impossible to unfold them, and as nothing further could be done, the abdomen was closed. The case ended fatally, and the autopsy showed that a slowly progressive peritonitis, probably of long standing, had firmly matted the intestines together. The plastic exudate forming on the peritoneal surfaces had gradually contracted the intestines, longitudinally infolding them close together, and thus obliterating at least three quarters of the intestine. These measurements were subsequently corroborated by Dr. W. H. Welch, of the Johns Hopkins University. A cross section of the intestine, after removal of the plastic exudate, showed that the lumen of the gut was apparently practically obliterated, yet the charcoal test had shown that it was permeable. After releasing the intestine from its plastic exudate, it could be stretched to its normal length and was found to be in almost normal condition. In examining some of the sections, Dr. Welch found some microscopic changes, but none of a gross character in the wall of the gut. He was undecided about the pathology of the case, but seemed inclined to think it was tuberculous.

CHOLECYSTITIS.

Dr. Henry Wald Bettmann, of Cincinnati, in this paper, defined cholecystitis as an inflammation of the gall bladder due to infection. By far the most frequent cause was the colon bacillus, while the typhoid bacillus was responsible for many cases. Occasionally, cholecystitis was caused by the pus formers, the influenza bacillus or the pneumococcus. Tubercular cholecystitis was very rare. The manner of infection was not always clear, but it was highly probable that in nearly all cases the infecting bacteria reached the gall bladder by way of the portal circulation. Ascent from the duodenum through the papilla of Vater was uncommon. The most frequent and serious result of cholecystitis was the formation of gallstones, and it might be considered as proven that gallstones resulted only as a sequel of catarrhal cholecystitis or cholangitis. The clinical history of gallstones had been pretty well worked out; we knew the cause, the symptoms, the complications and the cure, but the underlying disease, namely, the cholecystitis, had not received nearly the attention it deserved. Cholecystitis was probably the most frequent inflammatory disease within the abdomen; nevertheless, it was scarcely recognized by the profession at large as a disease *per se*. The fact that it was so frequently complicated by gallstones had focussed attention on the latter disease, and had strangely retarded our recognition of the significance of cholecystitis as the primary and often the more important condition. The history of appendicitis was closely analogous to it. The most serious complication of appendicitis, namely, peritonitis, had caused the nature of the underlying disease to be entirely overlooked up to within very recent times. The object of his paper, Dr. Bettmann said, was to throw a little light on a few of the more important clinical features of cholecystitis. During the past eighteen months he had had the opportunity of observing nearly 120 cases of gall bladder disease, and a large number of observations had led him to believe that in women, pregnancy, and especially the puerperium, directly laid the foundation for the primary infection of the gall bladder. Furthermore, it seemed exceedingly probable to him that the great majority of gallstones had their inception in attacks of cholecystitis during the active child-bearing period. As the age at which cholecystitis was most prevalent, autopsy findings indicated it would require some years of observation to determine that definitely. Autopsy findings indicated that gallstones were more common after thirty than before, and still more common after forty. The speaker's own observations led him to believe that cholecystitis was comparatively rare before the age of twenty, that it occurred with very great frequency between twenty and thirty, especially in women, and that the majority of primary attacks occurred before thirty-five. Attacks of cholecystitis which took place after the age of forty were usually recurrent ones, and in the majority of instances were already complicated by the presence of stones. As regarded treatment, it seemed probable that the interval between the primary cholecystitis and the deposit of cholesterin would be a most fruitful one for therapeutic endeavor. During the attack of cholecystitis the patient should rest in bed, with warm Priessnitz compresses over the upper half of the abdomen. To relieve pain, opiates should be given if necessary. The diet must be exceedingly limited during the first few days, and all cathartic drugs were contra-indicated. After the swelling of the gall bladder had subsided, and the local soreness had disappeared, the patient might be out of bed most of the day, and the diet should consist largely of cereals, meat, simple vegetables, bread and butter. Alcoholic drinks, acid foods and fruits should be prohibited. The use of salines should be begun early. Sulphate of soda, phosphate of soda, bicarbonate of soda and the salicylate of soda might be given in various mixtures. They were best administered dissolved in plenty of hot water, an hour and a half before each meal. Under this treatment, continued for months or, if need be, for years, patients were given an excellent chance to escape recurrences of inflammation, and, in fact, all symptoms referable to the gall bladder.

Dr. Gustav Futterer, of Chicago, raised the query, Could we do anything to destroy or mitigate the effects of the typhoid bacilli within the gall bladder? Ten years ago, he injected typhoid bacilli into the gall bladder of animals and then gave them various kinds of medical treatment without any effect whatever on the bacilli. Probably the most logical preparations would be the salicylates. Stadelmann, of Berlin, who had studied cholagogues all his life time, had come to the conclusion that ox-gall and the salicylates were the best cholagogues, and as salicylate is at the same time a disinfectant, the combination seems to be a very good one. Still, Dr. Futterer said, he had never seen any benefit from it. The acute symptoms of cholecystitis he had found yielded very quickly to oleum gaultheria, which he preferred to the salicylate of sodium. He knew of only one remedy to resort to in dealing with typhoidal infection of the gall bladder, and that was to open the gall bladder, wash it out and drain it.

Dr. John A. Lichty, of Pittsburg, asked Dr. Bettmann how he was able to recognize this pre-gallstone period, and how he was able to say that a certain case was or was not one of pure cholecystitis, without the presence of gallstones.

Dr. Jesse S. Myer, of St. Louis, thought Dr. Bettmann had underestimated, perhaps, the importance of stagnation, not only in the development of the chronicity of a cholecystitis, but also in the formation of gallstones. About 80% or 90% of gallstone cases were in women, and a large proportion of those met with in the male sex were in old men. There must be some definite reason for this, and the most probable one was that it was due to the stagnation of bile in the gall bladder as a result of a disturbance of intra-abdominal pressure. The speaker said he was convinced that pregnancy was not only a factor in the causation of cholecystitis, but especially in its prolongation.

DR. FRANKLIN W. WHITE, of Boston, said that Dr. Bettmann's paper emphasized the fact that prevention was likely to be the only satisfactory medical treatment of gallstones. Naunyn, of Strasburg, had found no evidence of the dissolving of gallstones by medical treatment excepting in two or three instances out of one thousand. The great difficulty in the way of the preventive treatment lay in making a sufficiently early diagnosis. In the vast majority of cases, gallstones probably remained latent for long periods of time.

DR. J. C. JOHNSON, of Atlanta, said that in the production of gallstones he thought emphasis should be laid on the stagnation of bile. As regarded treatment, he believed that such remedies as phosphate of soda, oleate of soda and olive oil owed their value to their laxative effect on the duodenum, thus increasing the patency of the ducts. Anything which favored muscular relaxation of the parts would favor the passage of the stones.

DR. BETTMAN, in closing, said he thought there was no longer any doubt that cholecystitis was always due to an infection, that gallstones only formed in an infected gall bladder, and that the causative factor in the majority of instances was the colon bacillus and in the minority of cases the typhoid bacillus. The more virulent forms of infection did not lead to the formation of gallstones because they destroyed the mucous membrane of the gall bladder. Cholecystitis, the speaker believed, was too often mistaken for what we termed, "spoiled stomach," "acute intestinal catarrh," "appendicitis," and so on, and if in those cases we examined the gall bladder region, we would be surprised in how many instances we could actually demonstrate the presence of an enlarged, inflamed and, therefore, very tender gall bladder. The mere frequency of acute cholecystitis was proof of the fact that we had overlooked it. His investigations on the subject had led him to believe that it was never latent and that we could recognize it if we hunted for it. If gallstones were due to cholecystitis, and we were able to recognize the latter, were we not neglecting our patients when we did nothing for them? We knew the cholecystitis preceded the formation of gallstones, and we might prevent their formation by keeping up the flow of bile and resorting to the medical expedients which we knew were successful in reducing inflammatory conditions.

THE BEHAVIOR OF SOME INDIGESTIBLE CARBOHYDRATES IN THE ALIMENTARY TRACT.

By DR. LAFAYETTE B. MENDEL, of New Haven. This paper reviewed the studies conducted by the writer, in the Sheffield Laboratory of Physiological Chemistry at Yale University, of the digestibility and utilization of various polysaccharide carbohydrates recommended for dietetic purposes in the form of lichens and algæ. They were for the most part not altered by the digestive juices or fermentative organisms of the alimentary tract. Such studies of the utilization of these products as had already been completed in the laboratory with which the writer was connected indicated a very unsatisfactory utilization of the constituent carbohydrates, which were scarcely attacked by familiar alimentary enzymes, nor profoundly altered by such bacterial agencies as they might be expected to become subject to in the digestive tract of man. The upshot of the review was the emphasis which it placed upon adequate digestion as a pre-requisite for the physiological utilization of carbohydrates, and the pre-eminent value of a few specific carbohydrates in nutrition. The lessons of the experiment warned against the hasty acceptance of every carbohydrate food product into the category of true nutrients. We must build upon the foundation of actual experiments in metabolism. Many of the modern products, doubtless, had a deserved place in the dietary in health or disease as food accessories, serving uses quite apart from any direct nutrient function. What was true of the carbohydrate constituents was applicable in many instances to other components. For example, the writer's experience with mushrooms, in which the nitrogen was found to exist largely in the form of unavailable non-protein compounds, taught further caution in drawing inferences respecting the nutrient value of such plant products. Perhaps the fact that so few of the suggested food materials of the kind under consideration had found favor in any general way, despite their widespread distribution in nature, was an almost instinctive expression of their non-nutritive makeup.

DR. MAX EINHORN, of New York, briefly discussed Dr. Mendel's paper.

THE NERVOUS INFLUENCE ON THE PRODUCTION OF SUGAR IN THE BODY.

By DR. J. J. R. MACLEOD, of Cleveland. In this paper, which embraced an exhaustive study of the subject, based upon original experimental work, the author summarized his findings as follows: Stimulation of the great splanchnic nerve caused in dogs intense hyperglycemia, accompanied by glycosuria and diuresis. It was improbable that the mechanism involved was one of vascular disturbance in the liver, for the following reasons: 1. Ligation of the hepatic artery did not produce hyperglycemia. 2. Neither did obstruction of the blood flow in the portal vein. 3. When the hepatic nerves were cut, splanchnic stimulation, although it produced the usual changes in the general blood pressure, was not followed by hyperglycemia. 4. Direct stimulation of the hepatic nerves usually caused hyperglycemia, but no constant change in blood pressure. Atropin did not diminish the hyperglycemia due to splanchnic stimulation.

INDICANURIA.

By DR. WILLIAM GERRY MORGAN, of Washington, D. C. This paper was read by title.

INTESTINAL SAND: ONE OF ITS SOURCES.

DRS. JESSE S. MYER and JEROME E. COOK, of St. Louis, in this paper, said the term "intestinal sand" should be applied only to sandlike particles occurring in the feces, and not to larger bodies, such as had been described by the French and English authors. The French, under the title of "*Sable Intestinale*," described bodies ranging from the size of grains of blotting sand to that of a pigeon's egg. The subject was in a rather confused state, because of the confounding of terms. Muco-membranous colitis was considered by many writers, especially the French, as a causative factor. Gouty diathesis, appendicitis, constipation and "lithogenic intestinal catarrh," as a disease, *per se*, had all been suggested as etiological factors. In the authors' opinion, these conditions seemed to bear little if any relationship to the phenomenon, the occurrence of the sand in these cases being, in all probability, accidental. The character and composition of the sand described varied greatly, the organic matter, for instance, ranging from 20% to 96%. The distinctions between "true" and "false" intestinal sand did not seem to be well founded. In the case reported in detail by the authors, the intestinal sand proved to be of vegetable origin and was derived from the banana.

As to the various clinical manifestations which have been mentioned by various writers in relation to intestinal sand, the writers believed them to be unrelated and incidental, excepting as to the rôle constipation might play. In their own case, they arrived at the conclusion that the sand was of vegetable origin because of its high organic content, the regularity of shape and size of the grains, etc., and their attention was called to a chain of sand, together with two or three fibro-vascular bundles, having their origin from a common point, and separated by a mass of parenchymatous cells. It was suggested that from its histological structure it might be a remannt of the tissue of the banana, and this proved to be true. Following this suggestion, they were able to produce, *ad libitum*, depending on the number of bananas ingested, sand identical with that found in their original case, and apparently identical with that described by various writers.

In connection with their paper, the authors exhibited specimens of intestinal sand recovered from the feces, and also specimens artificially produced from the banana. They also referred to the article of Bates, published in 1887 in the *American Journal of Medical Sciences*, entitled "Intestinal Concretion Resembling Sand and Originating in Cells from the Banana." Edes, in an article published in the Boston Medical and Surgical Journal, May 10, 1883, recognized them as of the same origin.

Dr. Henry Wald Bettmann, of Cincinnati, said that about ten years ago, at a meeting in Cincinnati, specimens of intestinal sand similar to the artificial ones shown by Dr. Myer were exhibited. They were sent to Washington for examination, and were traced, as in this case, to the banana.

Dr. John A. Lichty, of Pittsburg, said he had noticed that patients who suffered from mucous colitis were apt to pay close attention to their stools and some of these had reported the presence of sand. He had also found it in the stools of children who had nervous mothers, but hereafter, instead of attributing its presence to the nervous mother, he would be on the lookout for the banana.

Dr. Franklin W. White, of Boston, said that probably there were other vegetables than the banana that produced sand in the stools, perhaps of a different character.

Dr. Myer, in closing, said, in reply to a question, that they had never made any experiments with the cooked banana. When one knew of the presence of these grains in the stools, it was not difficult to see them with the naked eye, but they readily escaped observation unless carefully looked for. They appeared as small black granules.

GASTROMYORRHEA.

By Dr. Julius Friedenwald, of Baltimore. This paper was read by title.

A COMPARISON OF THE GUIAC AND BENZIDIN TESTS FOR INVISIBLE HEMORRHAGE IN DISEASES OF THE DIGESTIVE ORGANS.

Dr. Franklin W. White, of Boston, who presented this paper, said that in comparison with the guiac test, the Schlesinger and Holst modification of the benzidin test was from five to seven times as delicate for blood in watery solutions and gastric contents as the guiac test, and about twice as delicate for blood in the feces. The objection that the test was too delicate for clinical work was removed by the use of the Schlesinger and Holst modification. The chief advantage of the benzidin over the guiac test was the greater value of a negative result in ruling out hemorrhage, the greater ease and rapidity of its performance, and the greater clearness of the color reaction in the feces. Sources of error from food ferments and other substances in the alimentary canal were much greater in the guiac test than in the benzidin test. It was wise to control the benzidin test with the guiac, when positive results were found, until the technic was learned and tested individually.

Dr. Henry W. Bettmann, of Cincinnati, asked Dr. White what his experience with this test had been in carcinoma. In some of the cases coming under his observation, the test of the feces had not been uniformly positive. He had several times missed it in carcinoma of the esophagus, and in early cases of carcinoma of the stomach.

Dr. John P. Sawyer, of Cleveland, said Dr. White's paper emphasized how carefully we should scrutinize our methods, and how very sensitive this reaction was.

Dr. John A. Lichty, of Pittsburg, said that in cases of suspected gastric ulcer or carcinoma, the test for blood in the feces might prove negative in patients whose mixed diet had been stopped, and where the stomach had been put at rest by restriction to a milk diet.

Dr. Franklin W. White, of Boston, in closing, said the carcinoma cases in which the results were invariably positive were chiefly well-advanced cases. In the early stages of gastric carcinoma we may have intermittent blood in the stools, but with a good-sized ulcer the bleeding would be more or less continuous.

MANAGEMENT OF GASTRIC ULCER.

Dr. J. W. Bell, of Minneapolis, in a paper on this subject, said the following conclusions seemed warranted: 1. That an early and complete diagnosis was the first essential in the successful management of gastric ulcer. 2. That all cases of acute gastric ulcer were amenable to proper medical treatment, the only exceptions being cases characterized by uncontrollable hemorrhage and perforation. 3. That all uncomplicated cases of chronic gastric ulcer were amenable to proper medical treatment and should be so treated. 4. That chronic indurated ulcers of long standing, involving especially the pyloric portion of the stomach, including their complications and sequelae, frequently demanded surgical interference. 5. That the end results following gastro-enterostomy for the relief of chronic ulcer were not satisfactory. 6. That the ideal surgical treatment of chronic indurated ulcer was excision in some form.

Dr. Jesse S. Myer, of St. Louis, said he fully agreed with Dr. Bell that milk was not the ideal food for ulcer patients in the early treatment of the condition, nor did he favor the use of albumin water, because it was also irritating to the ulcer. He had obtained his best results during the first week with the use of some form of soluble carbohydrates, and of late he had been using the prepared flour known as Knorr's meal, which was made of peas, lentils and barley; these were partially dextrinized, and evidently formed no solid mass in the stomach. This food showed the finest possible division. It was first given in a perfectly liquid state, about the same consistency as milk, and then the quantity of flour added to it was gradually increased. He had also used broths, making a *schleimsuppe*, so highly recommended by the Germans, especially those made of lentils and peas. Later on, one might add a little milk, and then gradually bring the patient up to the use of milk in the second week, and in the course of time add other foodstuffs.

Dr. J. C. Johnson, of Atlanta, said that in some cases where the milk was badly borne, the objections to its use might be overcome by using one-third lime water and two-thirds milk, to which he added half a teaspoonful of bismuth and bicarbonate of soda.

Dr. Gustav Futterer, of Chicago, said that in the treatment of ulcer cases we should not lose sight of the fact that they were anemic, and became more so after hemorrhage. Anemia played a prominent part in gastric ulcer, and in the treatment of these cases he considered it of the utmost importance to at once attempt to bring up the hemaglobin; if we did not do that we prolonged the healing of the ulcer, we prolonged the period of the danger of hemorrhage and perforation, and later on of carcinoma. Rectal feeding the speaker regarded as unsatisfactory, even under the most favorable conditions.

Dr. Fenton B. Turck, of Chicago, referred to Lenhartz' method of treating gastric ulcer, and said that the use of meat in these cases, as recommended by him, had been of unqualified benefit. Meat was especially indicated because it was quickly digested, particularly when it was first treated by hydrolization. Discussing the question of operation for gastric ulcer, Dr. Turck called attention to the fact that Moynihan, in his recent writings, discouraged the idea of operating in the presence of hemorrhage, and personally he had become more and more convinced of the inadvisability of operating in the face of severe gastric bleeding.

Dr. Franklin W. White, of Boston, said he agreed entirely with Dr. Turck in regard to the question of hemorrhage and operation. In Boston they did not advise any more surgical interference in acute gastric ulcer with dangerous hemorrhage: first, because the surgeons had found it difficult or impossible to locate the ulcer within a reasonable length of time; second, because almost every operation of this kind had thus far proved fatal.

Dr. John P. Sawyer, of Cleveland, said that in the treatment of acute gastric ulcer he believed it advisable to give the stomach a short period of rest and rely upon rectal feeding. In spite of what had been said he still believed in the advantage of a certain period of complete physiological rest.

Dr. J. W. Bell, of Minneapolis, in closing, said he agreed with Dr. Sawyer in regard to the advisability of giving the stomach at least a short period of rest after the occurrence of hemorrhage, especially in the management of acute gastric ulcer. The length of that period should depend on the nature of the case.

NOTES ON PROGRESS IN GASTRO-ENTEROLOGY.

By Dr. A. L. Benedict, of Buffalo. This paper was read by title.

Book Reviews.

Detection of the Common Food Adulterants. By Edwin M. Bruce, Instructor in Chemistry, Indiana State Normal School. Pp. 84. New York: D. Van Nostrand Company. 1907.

In this little book are presented simple qualitative tests for all the common forms of food adulteration — tests which can be applied by one who may not have had the advantage of technical training. The several chapters deal with dairy products, meat and eggs, cereal products, bakers' chemicals, canned products, flavoring extracts, sugar foods, spices and condiments, fats and oils, and alkaloidal beverages. In view of the great public interest in the subject of the food supply, the book ought to have a large circulation and will doubtless be found to be a very satisfactory guide.

Practical Hygiene and Public Health. By Louis C. Parkes, M.D., D.P.H., and Henry R. Kenwood, M.B., D.P.H. Third edition, with illustrations. Pp. 620. Philadelphia: P. Blakiston's Son & Co. 1907.

This very convenient handbook has been thoroughly revised and also improved in form. It deserves more than ever the place which previous editions have earned for it in the very first rank of English works on the subject with which it deals.

The History of the Study of Medicine in the British Isles. The Fitz-Patrick Lectures for 1905–6 delivered before the Royal College of Physicians of London. By Norman Moore, M.D. (Cantab.), Fellow of the Royal College of Physicians; Physician to St. Bartholomew's Hospital. Oxford: Clarendon Press. 1908.

This volume comprises the Fitz-Patrick Lectures for 1905–6 delivered before the Royal College of Physicians, and concerns itself with a general history of the study of medicine in the British Isles. The first lecture treats of medical study in London during the Middle Ages; the second, the education of physicians in London in the seventeenth century; the third, the history of the study of clinical medicine in the British Isles, of which the fourth is a continuation. The author has evidently searched original sources for the material of his book, which will stand as a further addition to the growing number of volumes by medical men on the history of their profession. We commend it not only to the medical profession, but to others who are interested in the progress of civilization as manifested in medical custom and practice. The book is admirably bound and illustrated by various old documents and manuscripts of much historical interest, difficult as they may be of perusal.

The Opsonic Method of Treatment. A Short Compendium for General Practitioners, Students and Others. By R. W. Allen, M.B., B.S. (Lond.), Pathologist to the Royal Eye Hospital, London, S. E.; Late Gull Student of Pathology, Guy's Hospital, London, S. E. Philadelphia: P. Blakiston's Son & Co. 1907.

The progress of medicine is admirably illustrated by the appearance of a book such as this. The writer in the space of 138 pages has collected the main facts regarding the treatment by vaccines and the general theory of the opsonins. Not only to those working in the special subject, but to that much larger class of physicians who know of the work chiefly by hearsay, such a volume as this is of great value. The tendency to wait until a theory is thoroughly established before putting results attained in preliminary trial into accessible form often leads to a deplorable lack of knowledge on the part of those whose interests lie particularly in other fields. It is not to be questioned that much which this book contains even now must be modified, although it has been published less than a year. The space given to the opsonic index, for example, will no doubt in the future be lessened in view of its uncertainty and lack of practical utility in very many cases. The author gives a simple, readable statement of the theory of the opsonic index, of the preparation of the vaccines and the various infections and their treatment. We commend it to those who wish to be informed regarding a method of treatment which, in some form, undoubtedly has before it an important future.

The Common Sense of the Milk Question. By John Spargo. Pp. 351. New York: The Macmillan Company. 1908.

The title of this book, so suggestive of intolerance, causes in the reader at first a feeling of apprehension, which, however, soon gives way to one of amusement and wonder. The problem of the milk supply is one which has already enlisted the attention and sympathy of men of learning in various fields, and he is a rash man, indeed, who, although not a scientist, ventures into the field prepared to teach the public anatomy, physiology, chemistry, bacteriology, medicine, vital statistics and other branches. In anatomy, we learn that the mammary glands are in some cases incompletely developed, "the fibrous elements far outweighing the granular portion"; in chemistry, we are made acquainted with a lecithin that is phosphorescent and present in all milk fats; in bacteriology, we observe the man of science as he "takes a single drop of milk which is fair and pleasing to the eye, divides the drop and spreads its parts upon his gelatin plates, and then by the aid of the microscope shows that the smallest division of a drop is full of life." Then this sad scene, with its exposition of the difficulties in the way of accurate diagnosis: "A baby dies and the scientist finds in the little body sores and lesions which he does not understand until he has learned by repeated observation that in every sore and lesion there are numerous little living micro-organisms exactly like some of those contained in the drop of milk, and that there are very similar sores and lesions in the body of the cow from which the milk was drawn."

Milk is a curious substance, in that its appearance is not influenced by the shape or the food or the habits of the animal by which it is yielded. Thus we read: "There is little likeness between a woman and a camel or an elephant, and the contrast between the human being and the porpoise is quite as marked. That a cat's milk should closely resemble the milk of a cow or reindeer in appearance is remarkable in view of the absence of any likeness between the animals, and more especially the great differences in food and habits which characterize them." And yet he ventures the wholly gratuitous suggestion that the milk of an Eskimo woman, an analysis of which he has been unable to find, would not unlikely agree in composition with that of the reindeer in its "tremendous excess of protein and fat." It was known probably to but few, before the appearance of this book, that toughness of curd was dependent upon multiplicity of stomachs, as witness: "Now, note the reason for this difference in the toughness of the curd in the three milks: Both the cow and the goat have four stomachs, while man has only one." The "common sense of the milk question" does not include its chemistry nor that of cheese, nor even the correct reproduction for comparison in one table of data already presented in others.

Local readers will read with pain that in the name of cleanliness Boston has "endorsed a standard which represents filth and danger," and is satisfied with five hundred times the germ life which Von Behring believes to be the limit of safety, and more than fifteen times that accepted by the leaders in the certified milk movement, but they will be relieved somewhat by the implication that these same guides are themselves guilty of compromising with filth by accepting more than thirty times the Von Behring standard. Brockton and Cambridge, too, come in for their share of his scorn, and he knows "perfectly the arguments which will be advanced in defense of these standards." If he had known the facts instead of the arguments, he might have been moved to entertain a more kindly, charitable and forgiving spirit. He would have known that the authorities of those cities were well aware that any efforts to reduce a bacterial content of millions to one of a half million, which figure could not be regarded by the trade and by the producer as unreasonable, would inevitably bring it down to a tenth as much, and thus the object would be attained without cultivating resentment over the enforcement of what would have been regarded as oppressive measures. He would have known that this is exactly what did happen, but evidently he did not stop to inquire. Here he shows the same haste and accuracy in forming opinions as he does elsewhere in explaining nature.

In general the book is a plea for clean milk and consequent saving of infant life, but the arguments advanced are not new, having been presented again and again by far more competent writers who are recognized as authorities in a far more convincing way; and their weight is not increased by the very tiresome habit of joining some commendatory adjective, as "famous," "eminent," "great," "greatest living" and "well-known" to names that are familiar to all, especially when one whose reputation is almost purely local is described as "one of the greatest living authorities," and Koch as simply "the eminent German physician."

The style of the author is faulty and wearisome and the text is not improved by such statements as that we read to-day of the medieval plagues "after the lapse of centuries, with blanched cheeks and throbbing hearts." On the whole, the literature of the milk problem cannot be said to have been materially enriched.

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ADDRESS IN MEDICINE, BRITISH MEDICAL ASSOCIATION.

The extraordinary rapid development of medical knowledge makes possible each succeeding year a discussion of general medical matters which still has a flavor of originality. This year Dr. James Kingston Fowler delivered the address in medicine before the British Medical Association, taking as his subject, "Modern Medicine." In looking over this address it is certainly a remarkable fact that a large part of what he says would not have been possible five years ago, for the simple reason that our knowledge had not then progressed to a point in these matters which would permit of didactic statement. The object of this address is stated to be a "review of our position with regard to a few of the more urgent problems which confront us as they affect the art and science to which we are devoted — the student, the practitioner, the physician and the profession." After paying tribute to the memory to Pasteur and Lister, the subject of vaccine therapy is taken up in very considerable detail. The process of immunization receives due consideration, and the results, as thus far attained, of vaccine therapy. This statement is conservative, as we should expect; it is of interest to note that Dr. Fowler considers that the highest degree of interest in the use of a bacterial vaccine now centers about its employment in pulmonary tuberculosis. The new tuberculin is regarded as an unquestioned remedy of value in the treatment of lupus, tuberculous arthritis and other localized tuberculous infections. The situation is not so clear in relation to pulmonary tuberculosis. In this the writer thinks much more work must be done before any definite conclusions can be reached, particularly with relation to pyrexia. The hope is expressed that sanatorium treatment and vaccine therapy may prove of mutual assistance, but that the latter can ever replace the former is not for a moment to be expected. This attitude is not unlike that expressed by Dr. Lawrason Brown, of Saranac Lake, in a recent paper on the "Diagnostic and Therapeutic Use of Tuberculin," published in this Journal. Dr. Brown feels that tuberculin is an agent of great danger if carelessly administered, but that when properly given it presumably has some beneficial effect, although the statistics are extremely difficult to determine in this regard. Taken with the hygienic-dietetic treatment, tuberculin, according to Brown, does no harm and may markedly benefit the patient. In reaching his conclusions, which are evidently based upon a very careful consideration of the subject, Dr. Fowler discusses the opsonic index, particularly in relation to pulmonary tuberculosis. To the great number of physicians who are now either actively working in the general field of tuberculosis, as well as to those who are indirectly interested in the efforts toward the extermination of the disease, Dr. Fowler's address should be read with great interest, as exemplifying a calm, conservative and yet hopeful point of view.

The latter part of the address is taken up with a consideration of the student and practitioner of the future, and of the general outlook of the medical profession. In developing this part of his subject he thinks that the students of the future will more and more resort to universities for the preliminary and intermediate subjects of their medical education, and that the medical institutions will more and more become clinical schools, limiting their teaching to those subjects which must necessarily be studied in connection with the hospital. This point of view is certainly of great interest. It is increasingly evident that much of the earlier work of the present-day medical student may be most effectually carried out in relation with general university work. Anatomy, physiology and chemistry, in many of their aspects, are subjects of this sort. If this be the trend of events, the hospital and the medical school must become more or less merged, a tendency which is evidently growing, as shown by the increasing demand for so-called university hospitals. The practitioner of the future, Dr. Fowler apparent looks on with some degree of pity, particularly in relation to the increase and abuse of medical charity. The livelihood of the young practitioner is clearly being threatened, and will continue to be, so long as the present attitude toward gratuitous hospital care persists. On this point he aptly says: "This abuse of the generosity of the profession will, in my belief, continue and increase so long as it is for the interest of the managers of hospitals to show that they are doing what it is the fashion to call 'a great work.'" Sir Almroth Wright is of the opinion that the physician of the future will be an immunizator. This is no doubt the point of view of an enthusiast rather than of one who calmly surveys the entire field. Altered as our treatment of certain conditions may be by the new theories, it is not to be doubted that the function of the physician will remain essentially the same as heretofore. He will probably use more laboratory tests and more accurate means of arriving at conclusions, but the fundamental need in the future, as in the past, must be the exact diagnosis of a patient's malady. That we shall attain perfection in this department of our work is not to be expected, and Dr. Fowler, as so many others of ripe experience are now doing, insists that older methods shall not be allowed to fall into disuse in the presence of the new. A very practical turn is given to this notable address in the concluding section, of which we quote a paragraph.

"We are frequently reminded that ours is a noble profession, and so it is, and one which gives a continuous interest to life, and to which it is a source of pride and honor to belong; but I have observed that this reminder often precedes an attempt to place upon our shoulders, already overburdened with unpaid labor, some further duty similarly recompensed. To this there is a limit, which has long since been reached, if not overstepped. The public is apt to take a profession, like an individual, at its own valuation, and it may be to our advantage in the future to let it be known that we regard our services as worthy of their due reward."

THE PREVENTION OF VENEREAL DISEASE.

Some little time ago the Massachusetts Association of Boards of Health devoted one of its quarterly meetings to the neglected subject of the prevalence and the prevention of venereal disease. Dr. Abner Post and others read papers on the subject, and a thorough discussion followed. It was unanimously voted that a committee on sex hygiene be appointed by the president of the association, Dr. Henry P. Walcott, to consider and recommend such action as the association ought to take toward the prevention of these diseases. This committee has made its first report, in which it recommends, among other measures, that the trustees of all general hospitals within the Commonwealth be informed of the necessity for providing hospital care for needy patients with gonorrhea or syphilis in the contagious stage, since at present only the Penal Institution at Deer Island and the State Hospital at Tewksbury admit such cases; that all physicians and out-patient departments of all hospitals be furnished a circular of special information prepared for distribution to patients who have gonorrhea or syphilis, telling in plain language the precautions necessary for them to take to prevent spreading their disease. Lastly, and most important of all, the committee recommends that a campaign of education on the subject of sex hygiene be begun by the Massachusetts Association of Boards of Health among all classes, but especially among the young. The committee is sure if the lamentable ignorance of most young persons on this subject could be removed by a little honest teaching of the acts that the present deplorable state of affairs would soon be changed for the better. The committee has recently printed its first circular, a folder, entitled, "Sex Hygiene for Young Men." Copies of this leaflet will be mailed free upon the request of any responsible person for judicious distribution. Unions, schools and colleges, churches, associations of men and boys, physicians, employers and other citizens are invited to help in this work. Communication should be addressed to the Committee on Sex Hygiene, 4 Joy Street, Boston, Mass.

The first circular published by the committee is addressed particularly to young men, and concerns itself with a general statement of the normal conditions of sexual life and an explanation of the errors into which the ignorant are apt to fall, either through their own lack of knowledge or more particularly through the activity of charlatans. The statement made is clear, brief and to the point, and should certainly exert its influence in the purpose for which it is intended. Included also in this first circular is a brief statement regarding venereal diseases and the consequences to which their acquisition may lead both to the person afflicted and to others. The advice here also is perfectly frank, easily understandable, and certainly pictures conditions which should exert a restraining influence. The general subject of sexual hygiene is notoriously a difficult one to approach, but with the increasing publicity given to various matters of medical import, there can be no doubt that an efficacious method will be found of disseminating useful knowledge without exciting an undue morbid interest. The Massachusetts society has begun its work conservatively, with full recognition of its responsibility, and by methods which must strongly appeal to the sober-minded and to those who realize the extraordinary and pernicious ignorance which prevails among the people on these fundamental matters.

MEDICAL NOTES.

Appointment of Dr. William P. Spratling. — It is announced that Dr. William P. Spratling, for many years medical superintendent of the epileptic colony at Sonyea, N. Y., has been appointed professor of diseases of the nervous system and physiology at the Baltimore College of Physicians and Surgeons.

Cholera in Russia. — It is reported that the Russian government is preparing for an outbreak of cholera along the river Volga. A large area of which the Volga is the center has been officially declared to be within the cholera zone. It is thought that the outbreak is due to contamination of the water, probably from various sources. Isolation hospitals are to be erected at many points along the Volga, and a floating hospital and inspection service established. River steamers are to be supplied with physicians for the examination of various raftsmen, passengers and crews of vessels. These precautions, together with the establishment of a strict quarantine, it is expected will prevent a wide dissemination of the disease.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Aug. 4, 1908, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 39, scarlatina 35, typhoid fever 22, measles 26, smallpox 0, tuberculosis 60, cerebrospinal meningitis 0.

The death-rate of the reported deaths for the week ending Aug. 4, 1908, was 18.37.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, August 1, 1908, was 218, against 224 the corresponding week of last year, showing a decrease of 6 deaths and making the death-rate for the week 18.37. Of this number 104 were males and 114 were females; 214 were white and 4 colored; 152 were born in the United States, 58 in foreign countries and 8 unknown; 54 were of American parentage, 140 of foreign parentage and 24 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 45 cases and 1 death; scarlatina, 38 cases and 1 death; typhoid fever, 35 cases and 2 deaths; measles, 34 cases and 5 deaths; tuberculosis, 45 cases and 23 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 7, whooping cough 4, heart disease 18, bronchitis 2 and marasmus 4. There were 13 deaths from violent causes. The number of children who died under one year was 76; the number under five years 102. The number of persons who died over sixty years of age was 41. The deaths in public institutions were 78.

Cerebrospinal meningitis, 2 cases.

Drownings in Rhode Island. — It is stated that up to Aug. 3, 29 deaths from drowning have occurred in the waters of Rhode Island since June 10. Eight of these were drowned in salt water and 21 in fresh water.

Bequests. — Though the will of the late Daniel E. Millerick, among many bequests the following hospitals are beneficiaries: St. Mary's Infant Asylum, Dorchester; House of the Good Shepherd and the Carney Hospital.

A Tuberculosis Camp for Clinton, Mass. — It is announced that a site for a tuberculosis camp has recently been selected at Clinton, Mass., and it was expected that it would be ready for occupancy this week. There has been a gratifying response to requests for money and supplies.

Enlargement of Cambridge, Mass., Tuberculosis Camp. — So great a demand has been made upon the recently instituted open-air tuberculosis camp in Cambridge that an enlargement is already demanded. Two new shacks are to be erected, to be used solely for incurables, one for men and the other for women, each accommodating 25 patients.

Laws Relating to the Insane. — Governor Guild has sent the following nominations for a commission to revise the laws relating to insane persons: George T. Tuttle, M.D., Waverly, chairman; Henry R. Stedman, M.D., Brookline, and James S. Curtis, Esq., Boston. Dr. Stedman and Dr. Tuttle have long been identified with legislation relative to the care of the insane. The governor's choice of these men for the important work of revision is most heartily to be commended. Mr. Curtis, the third member of the commission, is a lawyer by profession, and is at present assistant attorney-general of the commonwealth.

NEW YORK.

Gift to a Tarrytown Hospital. — John D. Rockefeller has made a gift of $25,000 to the Tarrytown Hospital Association as his contribution toward the building fund of a new hospital. It is conditional, however, upon the managers of the association raising the sum of $50,000.

A Diamond Wedding. — A remarkable event recently took place at the Home for Aged and Infirm Hebrews, — the celebration of the seventy-fifth anniversary of the wedding of a couple aged respectively one hundred and three and one hundred years, Mr. and Mrs. Samuel Ephraim. Both are natives of Germany, where they were married, and they came to America about sixty years ago. A "diamond wedding" is always a rare occurrence, and it is the more noteworthy in this instance from the fact that neither of the pair were very young at the time of their marriage, the bridegroom being twenty-eight and the bride twenty-five. Among the inmates of the home who assisted at the celebration were two unmarried persons whose ages were respectively one hundred and ninety-two years, and two married couples over ninety. The husbands were respectively ninety and ninety-six years old, and the wives, ninety-one and ninety-five.

Opium Habit in New York. — Dr. Hamilton Wright, one of the three American members of the International Commission which is to meet at Shanghai, China, in January next to devise plans for the suppression of the opium traffic, has found in the course of his investigations that there are 6,000 persons in New York City addicted to the opium habit, about five sixths of whom are white. While it is probable that nearly all the Chinese population in the great cities of this country are more or less addicted to the smoking of the drug, Dr. Wright is of the opinion that not more than one third of these people take it to a harmful extent. The Chinese physicians themselves, he says, are leaders in the effort to find remedies for the treatment of the opium habit and are now using a cure discovered recently in Shanghai and said to be employed with success there. It is stated that this cure has already achieved good results in Philadelphia, and is at present being tested in New York.

Responsibility of Chauffeurs. — On July 27 the Appellate Division of the New York Supreme Court handed down a decision reversing a verdict obtained by George Cunningham against the owner of an automobile by which he was struck and injured at a time when the car was being operated by the chauffeur employed by the owner. Testimony at the trial showed that the owner had loaned it to the chauffeur for his private use, and the justice before whom the case came up charged the jury that the fact that the machine was at the time of the accident in possession of and driven by the chauffeur, with the owner's permission, put upon the owner the same liability for the chauffeur's negligence, if any, as would have been imposed upon him if the chauffeur were then engaged in the personal business of the defendant. It should be stated that two of the five justices of the Appellate Division sitting upon the case dissented from the reversed opinion given by the majority. In this opinion it was said: "It may be that it would be wise and in the public interests that responsibility for an accident caused by an automobile should be affixed to the owner thereof, irrespective of the person driving it; but the law does not so provide." A new trial was ordered, in which the chauffeur who drove the car must be the defendant. In view of the facts revealed by this case it would seem highly desirable that some definite law governing chauffeurs and fixing their responsibility should be enacted.

Sale of Cocaine. — Since the passage of the Smith anti-cocaine bill last year, and the vigorous prosecution of offenders under the combined efforts of the Health and Police departments which followed its enactment, the open sale of cocaine and preparations containing it has practically ceased in the city, but a class of secret dealers in the drug, who have now come to be styled "coke peddlers," has sprung up and is carrying on a thriving trade in dispensing it to the unfortunate victims of the cocaine habit. It has been found very difficult to find these miscreants and to obtain evidence against them when arrested, but the authorities are doing what they can to suppress this illicit traffic. Not long since a notorious negro and a woman known as "The Irish Queen," who plied their trade in the back rooms of Tenderloin saloons, were captured and sent to jail after months spent in the endeavor to get evidence to hold them. Another case successfully prosecuted was that of a cripple walking with two crutches, and himself a cocaine fiend, who employed a number of agents in selling the drug. Only last week fourteen young boys were arrested in Newark, N. J., at a rendezvous where they were holding a "sniff party," and they stated that they had obtained their cocaine from a peddler on Park Row, New York. Whatever success has attended the effort to suppress the cocaine traffic is very largely due to the indefatigable work of Inspector Hugh H. Masterson, of the food inspection division of the Health Department.

Treatment of Sarcoma by Mixed Toxins. — In consequence of public attention having been directed to the report of two cures of sarcoma in St. Louis by the use of the mixed toxins of Dr. William B. Coley, Dr. Coley recently consented to a newspaper interview which ought to prove of more service to the community than such interviews usually do. After referring to the very gratifying measure of success which has attended this treatment of sarcoma in his own and other surgeons' hand, a statement substantiated by reliable statistics as to diagnosis and results, he expresses regret that it has as yet received so little attention from the profession at large. "Although the cases show that the mixed toxins have already been used with success by a very large number of surgeons and physicians beside myself," he says, "it is constantly being brought to my notice that the possible benefit to be gained by the use of the toxins, in inoperable and apparently hopeless cases, and as a prophylactic against recurrence after primary operation, is still unknown to the majority of medical men. I also frequently receive letters from surgeons and physicians in this country, as well as other parts of the world, who are aware of the use of toxins, but are unacquainted with the recent developments in their preparation and application, or are in doubt as to the method of treatment in particular cases." Dr. Coley concludes in the following words: "The cases vary so much and in so many features that no pretense can be made to accuracy in estimating the chance of success in any particular case, or even in any particular class of cases. It can, however, be safely stated that in a very large number of cases there is a very fair prospect of permanent cure, while no case is so desperate that the possible benefit from the use of the toxins should be withheld."

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Current Literature.

The American Journal of the Medical Sciences.

June, 1908.

1. *Janeway, T. C. *The Use and Abuse of Digitalis.*
2. Conner, L. A. *The Clinical Study of Heart Cases.*
3. *Erlanger, J. *Irregularities of the Heart, Resulting from Disturbed Conductivity.*
1. *Piersol, G. M. *An Observation on the Jugular Pulse of Man.*
5. *McWilliams, C. A. *Primary Carcinoma of the Vermiform Appendix. A Study of Ninety Cases, Three Previously Unpublished.*
6. *Kelly, A. O. J. *Primary Carcinoma and Endothelioma of the Vermiform Appendix.*
7. Russ, R. *The Surgical Aspects of Dupuytren's Contraction.*
8. Briggs, W. A. *Torsion of Appendices Epiploicae and Its Consequences.*
9. *Tileston, W., and Wolbach, S. B. *Primary Tumors of the Adrenal Gland in Children. Report of a Case of Simultaneous Sarcoma of the Adrenal and of the Cranium, with Exophthalmos.*
10. Stone, I. S. *Congenital Absence of the Gall Bladder.*

1. Janeway's article is a valuable summary of precautions to be observed in the use of digitalis. He insists first that the physician should personally investigate the druggist's materials and method of preparation of the tincture or the infusion and should allow patients to go only to druggists whom he knows in this way to be reliable. Allen's English leaves, kept dry and in the dark for not more than a year, should be used, and the preparation should be made fresh for each prescription. The infusion, the tincture and the powdered leaves in capsule or pill are the only forms recommended. Cases are cited of patients who had been previously given digitalis (so called) without benefit, but who showed marked improvement after receiving doses of an infusion carefully prepared. For hypodermic use the tincture is still considered more reliable than the new preparations, digalen and digitalone. A second precaution in the use of digitalis is to confine its administration to suitable cases. The cardinal indications for the use of digitalis are loss of tone in cardiac muscle and diminution of the systolic output, especially when this has resulted in venous stasis. When these are present digitalis is indicated. It is not indicated to slow the heart in paroxysms of tachycardia or in fever, to produce diuresis in acute nephritis, or to remove an inflammatory pleural effusion. The dosage should be regulated by study of the individual case, by records of heart and pulse rate, blood pressure, urine amount and changes of body weight. Two drams of the infusion or ten minims of the tincture every four hours are mentioned as starting points in administration. When vomiting occurs, the rectum may be used, injecting half an ounce of the infusion three times a day. In urgent cases subcutaneous administration is indicated or the intravenous use of digalen. In conclusion, it is urged that rest and sleep, restriction of fluid intake, purgation, correction of anemia and favorable psychic influences be not forgotten.

3. Erlanger's paper begins with a résumé of his work in connection with heart block between auricle and ventricle at the bundle of His, — the condition present in Stokes-Adams disease, — explaining the results clearly and simply by means of a diagram of the graphic record. This auriculo-ventricular heart block prevents the contraction wave from passing normally from auricle to ventricle, so that only every second or every third auricular beat is followed by a ventricular beat, and in complete block the ventricle beats at a slow rate entirely without relation to the auricular rhythm. Analogous to this best-known and probably commonest form of heart block, other forms have been studied experimentally in animals and are thought to occur clinically. Sino-auricular heart block, the blocking of impulses between their origin in the mouths of the great veins and the right auricle, has been observed with some certainty in animals and perhaps in one human being by Wenckebach. It results in a slowing of the beats both of auricle and of ventricle, both, however, maintaining their normal mutual relations. Auriculo-auricular block has been observed in animals in which the auricles have been separated by a cut either to the left or to the right of the septum. In these the left auricle either assumed a slow independent rhythm or ceased entirely to beat. Other forms of heart block have been produced in the laboratory but are less likely to be of clinical importance.

4. Piersol's work, done under Professor Wenckebach in

Groningen, attempts to decide the question as to whether the *c* wave in the jugular pulse described by Mackenzie is due to carotid impact, as Mackenzie and Wenckebach have believed, or to some other cause, as supposed by Fredericq and others. Piersol finds in many tracings a hitherto undescribed wave, independent of the *c* wave, which he believes to be that found by Fredericq in the dissected vein of the dog, and taken by him to be the *c* wave.

5 and 6. The articles of McWilliams and of Kelly are largely devoted to reports of cases. McWilliams also analyzes the statistics obtained. Seventy-nine of the lesions were discovered at operation undertaken in most cases for symptoms of chronic appendicitis. The remaining cases of the series were found at autopsy. The diagnosis was made microscopically in all cases. The condition occurred 26 times in 6,505 appendices, or in 0.4% of cases. Notable features are that in 60% the patients were under thirty years of age and that in only one of 79 operative cases was recurrence known to have occurred.

9. Tileston and Wolbach report in detail the clinical and pathological findings in the case of a child with simultaneous sarcomata of identical type in the adrenal and in the cranium. This case is of importance in that, as Hutchinson has shown, the occurrence of adrenal tumor with tumor in the head is a definite pathological syndrome. The authors review Hutchinson's ten reported cases and four additional ones found in the literature. Tumors of the orbit in infants and young children, therefore, should arouse the suspicion of metastases from an adrenal growth. [F. W. P.]

Deutsche Medizinische Wochenschrift. No. 23.

June 4, 1908.

1. Krönig. *Painless Delivery by Means of the Morphin-Scopolamin Method.*
2. *Schmidt, A. *The Results of the More Recent Methods of Investigation of the Function of the Intestine.*
3. *Einhorn. *A Case of Stenosis and Insufficiency of the Pylorus.*
4. *Krumbein and v. Schatiloff. *Investigations on the Meningococcus Serum.*
5. Schulthess. *Sphygmobolometric Investigations on Healthy and Diseased Persons.* (Concluded.)
6. Friedländer, J. *On Unilateral Sweating.*
7. *Brunk, A. *The Operation of Deep-seated Abscesses of the Tongue.*
8. Ewald. *The Treatment of Fractures of the Fingers.*
9. Davidsohn, F. *Cervical Ribs and Trauma.*
10. Prinzing. *The Frequency of Premature Delivery in Twin Pregnancy.*

2. Schmidt proposes a modification of his well-known test diet for the examination of the intestinal function. This new diet allows the patient more variety and dispenses with most of the weighing. The rest of the article contains his views on the diagnosis of disturbances of the intestinal digestion as put forth in earlier papers, but does not advance anything new. He describes the appearances of the normal stool of a patient on the test diet and the principal abnormalities found in the various disturbances of intestinal digestion and their significance. Macroscopic pieces of connective tissue in the stool always signify disturbance of the gastric digestion, and their presence gives a clue for the treatment of the so-called gastrogenic diarrheas. The treatment of the stomach in these cases is usually curative. Macroscopic bits of muscle in the absence of increased peristalsis signify faulty intestinal digestion, usually due to deficiency of pancreatic juice. He still believes that a positive result with the meatball test is conclusive evidence of lack of the pancreatic secretion, although this may be due to purely functional disturbance without anatomical changes in the pancreas. The appearance of starch in any considerable amount indicates a lack of the amylolytic ferment of the intestinal juice, as disturbances of the stomach alone are never associated with the appearance of starch in the stools. A defective starch digestion is chiefly seen in the so-called fermentative intestinal dyspepsia, which may be usually promptly relieved by a withdrawal of carbohydrates from the diet. Chronic constipation, he believes, is almost always due primarily to too complete digestion of the food, which results in a diminution of the intestinal bacteria and consequently a deficiency in the products of bacterial decomposition which constitute the chief stimulus to intestinal peristalsis.

3. This article by Einhorn is a description of a case of insufficiency of the pylorus combined with stenosis. The patient had a partial stenosis of the pylorus following ulcer and showed constantly large amounts of bile-stained acid fluid in the fasting contents. Einhorn believes that insufficiency of the pylorus is not infrequently combined with stenosis. The reviewer has seen one or two such cases associated with cancer near the pylorus.

4. The writers have undertaken, at the suggestion of Kolle, investigations as to the possibility of standardizing meningococcus serum by means of the method of fixation of the complement of Bordet and Wassermann. They find that the amount of the substances causing fixation of the complement may be accurately measured by this method. The content of the serum in these substances does not, however, vary proportionately with the agglutinin content. They also find that this is a very accurate way to distinguish the meningococcus from other allied organisms, such as the gonococcus and micrococcus catarrhalis. The method seems to them absolutely specific, even for mixtures of the meningococcus with other organisms, and is, therefore, superior to the agglutination reaction, for it has been shown that the gonococcus may be agglutinated by meningococcus serum and *vice versa.*

7. Brunk recommends operatiou of deep-seated abscesses of the tongue by means of the external route in case the abscess cannot be located by incisions from the mouth. He approaches such abscesses by exposure of the hyoglossus muscle and blunt separation of its fibers. The method was very successful in two cases operated on by him. [W. T.]

No. 24. June 11, 1908.

1. v. Herff. *The Value of Different Methods of Treatment of the Bacterial Infections in the Puerperium.* (Continued article.)
2. *Hübener. *The Distribution of Bacteria Belonging to the Paratyphoid-B Group.*
3. *Rimpau, W. *The Distribution of Bacilli of the Paratyphoid Group.*
4. *Koblanck. *Nasal Reflexes.*
5. *Kuttner, A. *Nasal Dysmenorrhea.*
6. Burckhardt-Socin and Schlagintweit. *An Unusual Case of Miliary Tuberculosis and Septicemia.*
7. *Würz. *A Comparative Study of the Gastric Secretion after Riegel's Test Meal, Ewald's Test Breakfast, and Sahli's Soup.*

2. The paratyphoid group includes, beside the paratyphoid bacilli, the bacilli of hog cholera, of mouse typhoid, of meat poisoning and the psittacosis bacillus. It is impossible at the present time to distinguish these various members of the paratyphoid group from one another. Investigations carried on by Hübener at the German Imperial Board of Health showed that, out of one hundred specimens of sausages, six contained bacilli belonging to the paratyphoid group, although these sausages were apparently exemplary and caused no disturbances after being eaten. Hübener considers that the bacilli probably belonged to the hog cholera variety, for it has been shown by Uhlenhuth that these organisms may occur in the intestines of healthy swine. The presence of bacilli of the paratyphoid group in articles of food suggests that this may be the cause of the appearance of paratyphoid bacilli in the stools of healthy people who have not come in contact with patients sick with paratyphoid.

3. Rimpau has found, in the course of a systematic examination of people in the neighborhood of typhoid patients, 26 who showed paratyphoid bacilli in the excreta. Many of these had not come into contact with those sick with paratyphoid, or even with typhoid patients. In

nine of these twenty-six, the bacilli were present in the urine only, pointing probably to an invasion of the blood by these bacilli, although the people who harbored them were not ill. A woman who appeared perfectly well and had a negative Widal showed paratyphoid bacilli in the blood. Such observations as these make it necessary to modify our previous ideas of the significance of bacteriemia, for they show that an invasion of the blood may take place without producing any symptoms of disease. Rimpau, like the writer of the preceding article, found bacilli of the paratyphoid group in a sausage which was otherwise perfectly good, and he also attributes the presence of paratyphoid bacilli in the stools of healthy people to the use of food which has been contaminated. It follows from these observations that the mere presence of paratyphoid bacilli in the stools does not by any means prove that the patient is suffering from the disease paratyphoid, and even their presence in the blood is not conclusive. It is necessary that there should be also an agglutination reaction for the paratyphoid bacilli.

4 and 5. Koblanck has seen good results from nasal therapy in various gynecological affections and discusses the relationship of the nasal mucous membrane to the genital organs, particularly the uterus. He believes in the theory of Fliess, that there is a specific connection between certain points in the nose and the internal genitalia. These points are especially the anterior portion of the lower turbinate and the tuberculum septi. The pain in certain cases of dysmenorrhea may be made to disappear by cocainization of these points, and a permanent cure may result from cauterization of the swollen mucous membrane. The pains of labor may be also mitigated by cocainization of these points, while rubbing them smartly with adrenalin stimulates contractions of the uterus. Kuttner, in the second of these articles, opposes the theories of Fliess, and believes that the results obtained are due partly to suggestion and partly to the general action of cocain and to the good effects on the body in general of improvement of nasal conditions.

7. After a comparative study of the secretion of the stomach after these three types of test meal, Würz comes to the conclusion that the Riegel test meal is the best for general use, because it most nearly approximates to normal conditions and gives rise to the largest amount of secretion. The Sahli soup came second in point of efficiency and the Ewald test breakfast last, but the last named has the advantage of being easily borne and easily procured. [W. T.]

No. 25. June 18, 1908.

1. Sommer. *Melancholia and its Treatment.*
2. *Marina, A. *Is there a Rudimentary Form of Muscular Dystrophy?*
3. Herhold. *The Use of Perhydrol and Sodium Perborate in Surgery.*
4. Duhrssen. *Operation for Extra-uterine Pregnancy by the Vaginal Route.*
5. v. Herff. *The Value of Different Methods of Treatment of the Bacterial Infections in the Puerperium.* (Continued from No. 21.)
6. *Ogata. *The Etiology of Rat-bite Disease.*
7. *Waterman, N., and Boddaert, R. J. *The Demonstration of Adrenalin in the Blood and Urine.*
8. Ehrmann, R. *An Apparatus to Obtain Gastric Contents.*
9. Oppenheimer, E. H. *The Use of Compresses to the Eyes in Dispensary Practice.*

2. Marina describes a case of progressive muscular dystrophy in which recovery took place. Only a few groups of muscles were involved, but the diagnosis seems accurate. Recovery from this disease is very rare, and Erb in a letter to the writer stated that he had seen in his large experience only one such case.

6. Rat-bite disease is an infectious disease occurring in China and Japan in persons who have been bitten by rats. After an incubation of ten days the seat of the bite becomes inflamed and often ulcerates; the neighboring lymph glands enlarge and there are recurring attacks of fever, often of a malarial type. The mortality is about 10%. Ogata has found in two cases of this disease an organism belonging to the sporozoa. This was present in the ulcer, the lymph nodes, the blood and internal organs and could be grown upon blood serum. It was pathogenic for rabbits and guinea pigs and could be recovered from the organs of the infected animals after death. He pictures the life cycle of this sporozoön, and concludes that it is the cause of the disease.

7. Various investigators have recently reported the occurrence of adrenalin in the blood and urine of nephritic patients. The demonstration has depended on the use of two reactions: first, the appearance of a blue-green color on the addition of ferric chloride; second, the occurrence of dilatation of the enucleated frog's eye after application of the suspected fluid to it. Waterman and Boddaert point out that it has been shown that adrenalin is a derivative of pyrocatechin, and that pyrocatechin and some other allied substances, such as resorcin and salicylic acid, will give both these reactions. Since pyrocatechin itself occurs in the blood and urine of healthy subjects, and may presumably be increased in disease, they conclude that a positive result from these reactions does not necessarily prove the presence of adrenalin in the fluid under examination. [W. T.]

Münchener Medizinische Wochenschrift. No. 21.

May 26, 1908.

1. *Busse, O. *The Presence of Typhoid Bacilli in the Blood of Non-Typhoid Patients.*
2. Peters, A. *Congenital Word Blindness.*
3. Schickele. *Diagnosis of the Cause of Severe Hemorrhages During Labor.*
4. v. Ruppert, A. *The Treatment and Prognosis of Chronic Middle Ear Suppuration.*
5. Stimmel. *Bier's Hyperemic Therapy in Otitis Media.*
6. Knoepfelmacher, W. *The Vaccine Test by Subcutaneous Injection in Cow Pox.*
7. Jerusalem, M. *After-Treatment of Laparotomy Patients.*
8. Plate, E. *The Condition of the Lymph Glands in Many Joint Affections.*
9. Weber, F. W. A. *Total Subcutaneous Tear of the Brachial Plexus without Injury to the Bone.*
10. Härle. *Amylene Hydrate in Eclampsia.*
11. Heimann. *The Treatment of Eclampsia in Children by Means of Atropin Methyl Bromate.*
12. Jaks, A. *A Simple Device for the Facilitation of Childbirth.*
13. Bergel, S., Müller, E., and Peiser, A. *New Points of View in the Treatment of Suppurative Processes.*
14. Müller, F. C. *Historical Contribution to the Knowledge of Appendicitis.*

1. Busse reports four cases, — two of general miliary tuberculosis with autopsies, one of advanced phthisis with symptoms of tuberculosis of intestines, and one of frank lobar pneumonia, — in all of which typhoid bacilli were recovered at least once from the blood. In the two miliary tuberculous cases the diagnosis of typhoid fever was made on the results of the blood cultures, the true diagnosis being revealed only at autopsy. None of the four cases developed a Widal reaction. The author believes that in these cases the typhoid bacilli entered through the ulcerated or inflamed mucous membrane of the gut, so reaching the blood stream. Either the cases were "bacilli carriers," or had temporarily, in the intestines, typhoid bacilli which did not result in an infection. Great care, he thinks, must be taken, therefore, not to lay too much stress on the finding of typhoid bacilli in the blood stream, as this may occur without the existence of typhoid fever, especially in the absence of the Widal reaction. [R. D.]

Berliner Klinische Wochenschrift. No. 21.

May 25, 1908.

1. Neufeld, F. *The Foundations of Wright's Opsonin Theory.*
2. Bernhardt, M. *Late Results of a Gunshot Wound in the Right Temple.*
3. *Strauss, H. *The Limitation of Fluid in the Diet of Nephritics.*

4. **Beuttenmüller, H.** *Toxic Osteoperiostitis Ossificans in Chronic Icterus.*
5. **Levy-Dorn, M., and Cornet, H.** *The Röntgen Picture of the Normal Chest with Regard to the Diagnosis of Incipient Phthisis.*
6. **Oberndörffer, E.** *Paralysis Following the Use of Hand Cuffs.*
7. **Pütter, E.** *The Care of the Tuberculous.*
8. **Laquer, A.** *The Practical Significance of Measuring the Blood Pressure in Physical Therapy.*

3. Strauss does not believe with v. Noorden that fluids should be cut to a minimum in nephritis, but holds that fluids should be given to meet a decided need of the body, i.e., to dilute the toxins circulating in the blood and tissues, which dilution aids the heart's action in eliminating these toxins. When the heart is thoroughly compensated, he believes that much fluid should be given. In the edema of nephritis, the fluid is retained in order to dilute the toxic action of the retained substances, and in edema, therefore, he believes there is no indication against administering fluids. [R. D.]

DEUTSCHES ARCHIV FÜR KLINISCHE MEDIZIN. 1908. BD. 93. HEFT. 3.

1. **Barcroft and Morawitz.** *The Ferricyanide Method for the Clinical Estimation of the Gas Content of the Blood.*
2. **Bahrdt.** *Experimental Studies of the Tuberculin Reaction.*
3. ***Ebstein.** *A Study of Epidemic Meningitis.*
4. ***Pisarski.** *The Influence of Phosphorous Poisoning on the Morphological Elements of the Blood in Men and Animals.*
5. **Brodski.** *Experimental Studies of the Relation of Blood Pressure and of the Influence of Diet upon the Same in Chronic Nephritis.*
6. ***Klieneberger and Scholz.** *The Influence of Human Blood Serum on the Proteolytic Leucocyte Ferment and the Diagnostic Importance of Such Anti-Ferment Actions.*

3. Ebstein gives a long discussion of the history, etiology, pathology and symptomatology of epidemic cerebrospinal meningitis. There is nothing essentially new in this discussion.

4. In men and animals, according to Pisarski, phosphorous poisoning produces transitory polycythemia and a primary leucopenia, followed in cases with favorable outcome by leucocytosis. Phosphorus acts as an irritant and stimulant of the bone marrow, as shown by the appearance in the circulating blood of normoblasts and myelocytes, and by tenderness of the bones.

6. Proteolytic leucocyte ferment and its anti-ferments have been extensively discussed by E. Müller and his pupils. A considerable diagnostic importance has been attached to such studies. Klieneberger and Scholz have made more than a thousand of these observations on 150 cases, and conclude that for diagnosis and prognosis in infectious diseases the method is of little value. There are many sources of error in determining quantitatively these ferments which appear to be unavoidable and which render the results of comparatively little value, according to these authors. They believe that many of the claims of Muller and his pupils are too sweeping, and unless this method can be materially modified and improved, it will not be of very great value clinically. [H. A. C.]

DIE THERAPIE DER GEGENWART. HEFT 5.
MAY, 1908.

1. ***Kohts.** *Some Cases of Hirschsprung's Disease in Childhood.*
2. **Aron, E.** *What Diseases Should be Treated in the Pneumatic Cabinet?*
3. ***Steinitz, E.** *The Symptomatology, Prognosis and Treatment of Acute Veronal Poisoning.*

1. Kohts describes two cases of congenital dilatation of the colon in children, six and three years old respectively. In both, prominence of the abdomen, particularly on the left, associated with marked and long-continued constipation, cramp-like pains and general slow reduction of the nutrition were the prominent symptoms. The autopsy in the second case showed an increase in length and a dilatation of the colon, most marked in the descending portion, especially at the sigmoid flexure. The muscle coats of the large intestine were markedly hypertrophied. The treatment of these cases is of little avail unless begun early after the appearance of symptoms. The principle of treatment is to bring about regular evacuations of the bowel, either by lavage of the large gut or high oil enemata, the latter means having been most effective in the hands of the author. One case of complete recovery following a resection of 50 cm. of the sigmoid has been reported.

3. Steinitz describes the symptoms and course of four acute veronal poisonings. The symptoms are referable almost wholly to the nervous system, the intensity of the symptoms depending on the amount of the drug taken. Four stages of poisoning may be noted: (*a*) sleep from which the patient may be awakened; (*b*) unconsciousness from which the patient cannot be aroused; (*c*) a condition resembling hysterical coma seen in light or medium degrees of poisoning; (*d*) deep coma, with disappearances of all reflexes, seen in the more extreme cases. The patient appears to be in a healthy sleep, occasionally with slightly stertorous respiration; in severe cases the breathing may be very shallow. It is impossible to bring the patient out of the sleep by shaking or other stimuli. The pupils may be normal or slightly narrowed and in most cases react to light. Rarely in fever cases the light reaction is lost. The corneal and conjunctival reflexes are absolutely lost. The pharyngeal reflex is lessened or absent. Tendon reflexes are unchanged, or slightly diminished. The skin reflexes may be absent. The muscles are absolutely flaccid. Involuntary evacuations of feces and urine usually occur. The heart action is good, pulse is regular and strong enough. The respirations in severe cases fail before the heart. Occasionally fever occurs, but this is not a regular symptom. The light or medium case recovers inside of forty-eight hours. The patient comes slowly out of unconsciousness and again sinks back. The reflexes return slowly to normal. Occasionally slight tremors and spasms of the muscles and slight opisthotonos occur during the stage of awakening. Often this is followed by hysterical crying and weeping, with great restlessness. During convalescence unsteady gait, slow speech and disturbances of sight persist for some time. In light cases the symptoms last about ten days. When there is no history of the use of veronal, the diagnosis is very hard and may be aided by examining the urine for veronal, which is excreted thus unchanged. The condition may easily be confounded with severe hysteria, or morphine poisoning, though the condition of the pupil is here an aid. Uremia may also be comfounded with veronal poisoning. Mild cases cure themselves. In all cases, especially when seen soon after the ingestion of the drug, stomach lavage should be practised, as the absorption of veronal from the stomach is slow. The emptying of the bowel is more important, as veronal is better absorbed in alkaline than an acid medium. Large doses of castor oil and enemata should be used. Diuresis should be brought about. While the pharyngeal reflex is gone, feeding through a stomach tube, or nutrient enemata, must be used. In the irritable stage of convalescence, morphine should be administered in small doses. [R. D.]

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Miscellany.

THE ENGLISH NATIONAL SOCIETY FOR EPILEPTICS.

The fifteenth annual meeting of this useful society was held last week under the chairmanship of Mr. Montefiore Micholls. The report of the honorary medical staff for the year 1907 stated that the general health of the patients in the society's colony at Chalfont was good, and it was noted as an indication of the excellence of the conditions under which the colonists live that the average annual mortality at the colony since the opening of the institution in 1894 had been only 8 per 1,000. Considering that the inhabitants of the colony are sufferers from so serious a malady as epilepsy, this exceptionally low death-rate reflects great credit on those responsible for their care. The report of the executive committee shows that the extensions of the colony made in previous years were continued last year, when an additional home for women, provided by a generous donation of £3,200 given by Mr. Frederick Greene, was completed, and a home for young girls has been commenced; the entire cost of this, estimated for building and furnishing at £3,500, is being borne by another generous benefactor, Mr. H. Woolcott Thompson. A home for boys and an additional home for men are greatly needed. The colony has at present accommodation for 224 patients, which, however, is obviously insufficient when it is borne in mind that the total number of epileptics in this country is usually estimated at over 40,000, a very considerable proportion of whom would be suitable cases and would probably derive great benefit from treatment in the society's colony or one of the other homes for these sufferers. — *British Medical Journal.*

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EXECUTION OF THE INSANE.

RECENTLY, according to the *British Medical Journal,* an English justice has sentenced a lunatic to be hanged for murder. The murder was a peculiarly brutal one; in fact, so cold blooded as to suggest insanity as a motive. This was amply proved by the testimony in court. In spite of the evidence submitted, the sentence of death was pronounced. After commenting at considerable length upon the case, our contemporary concludes as follows: "This may be the best way of disposing of such persons, but we very much doubt whether public opinion would approve the doctrine if the issue were placed fairly and squarely before it. The legal profession sometimes twits the medical with desiring to save the lives of murderers on sentimental grounds. This is a misunderstanding of the facts. Medical opinion does not seek to interfere with the course of justice; it is only anxious that justice for once in a way should carry out her duties with eyes open. Medical opinion says the accused person is insane, acted under an insane impulse and was irresponsible; the 'legal test' rigidly applied, as in the instance of this particularly brutal murder, does not afford the jury a fair test of responsibility or irresponsibility. It is, therefore, bad, and results in the punishment of an irresponsible person, which is, we submit, contrary to the spirit, if not to the letter, of our laws. If the legislature were to direct that insane murderers ought to be hanged, it would be a different matter. As it is, the public believe that insane persons are not hanged. Clearly they are mistaken."

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JULY 25, 1908.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	—	—
Chicago	513	196	Waltham	7	1
Philadelphia . . .	502	187	Pittsfield	6	2
St. Louis	—	—	Gloucester	4	2
Baltimore	230	102	Brookline	3	—
Cleveland	—	—	North Adams . .	2	—
Buffalo	—	—	Chicopee	12	9
Pittsburg	—	—	Northampton . .	6	4
Cincinnati	—	—	Medford	4	2
Milwaukee	—	—	Beverly	2	—
Washington . . .	—	—	Leominster . . .	—	—
Providence . . .	—	—	Hyde Park . . .	1	1
Boston	227	103	Melrose	3	1
Worcester	45	16	Newburyport . .	—	—
Fall River	46	33	Woburn	4	0
Cambridge	30	6	Westfield	5	1
Lowell	47	27	Marlboro	4	0
Lynn	22	10	Revere	3	1
New Bedford . .	35	15	Attleboro	2	2
Springfield	21	10	Peabody	—	—
Lawrence	29	21	Adams	—	—
Somerville	18	10	Clinton	1	0
Brockton	13	5	Gardner	1	—
Holyoke	26	18	Milford	—	—
Malden	9	2	Watertown . . .	2	—
Chelsea	3	1	Plymouth	—	—
Newton	9	4	Weymouth . . .	4	2
Salem	24	—	Framingham . .	5	3
Haverhill	9	5	Southbridge . . .	3	2
Fitchburg	—	—	Wakefield	—	—
Everett	7	3	Webster	—	—
Taunton	11	5	Arlington	4	—

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING AUGUST 1, 1908.

J. H. PAYNE, passed assistant surgeon. Detached from the Navy Yard, Boston, Mass., and ordered to the "Salem" when commissioned.

S. BACON, assistant surgeon. Detached from the Naval Hospital, New Fort Lyon, Colo., and ordered to the "South Dakota."

G. B. CROW, assistant surgeon. Ordered to the Naval Hospital, Norfolk, Va.

A. L. CHILTON, assistant surgeon. Ordered to the Naval Hospital, Philadelphia, Pa.

J. R. PHELPS, assistant surgeon. Ordered to the Naval Hospital, Boston, Mass.

H. BUTTS, assistant surgeon. Detached from the Naval Station, Cavite, P. I., and ordered to the Naval Hospital, Canacao, P. I.

H. L. KELLEY, assistant surgeon. Detached from the Naval Hospital, Canacao, P. I., and ordered to the Naval Station, Cavite, P. I.

RECENT DEATHS.

DR. GEORGE E. G. KELLY, of Bedford Park, Borough of the Bronx, New York City, a graduate of the Medical Department of New York University in 1892, died on July 29.

DR. GEORGE E. WEST, who was a practising physician in Brooklyn for many years, died at Yonkers on the Hudson, on July 26, from appendicitis.

BOOKS AND PAMPHLETS RECEIVED.

Linksseitige Trommelschlegelfinger bei Aneurysma arcus aortae. Von Dr. Theo. Groedel II. Reprint.

Quain's Elements of Anatomy. Edited by Edward Albert Schafer, LL.D., Sc.D., F.R.S.; Johnson Symington, M.D., F.R.S., and Thomas Hastie Bryce, M.A., M.D. In four volumes. Vol. I. Eleventh edition. Illustrated. New York, Bombay and Calcutta: Longmans, Green & Co. 1908.

Transactions of the American Association of Genito-Urinary Surgeons. Vol. II. 1907.

Religion and Medicine. The Moral Control of Nervous Disorders. By Elwood Worcester, D.D., Ph.D.; Samuel McComb, M.A., D.D., and Isador H. Coriat, M.D. New York: Moffat, Yard & Co. 1908.

Address.

PROPHYLAXIS IN SURGERY.*

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Mr. President and Colleagues: My first and pleasant duty is to return my sincere thanks for the honor of being placed in the position I occupy at this hour. I owe it, I gratefully acknowledge, to the generous good feeling of my local colleagues and to the privilege of seniority, but I accept it as a compliment to this city, and a recognition of the position occupied by provincial surgery.

LORD LISTER AND ASEPSIS.

Looking back over the forty years since I entered as a student at Guy's Hospital, great indeed have been the changes and developments in the practice of surgery that it has been my happy lot to witness. But all other advances are overshadowed by the epoch-making work of Lord Lister, who at that time was beginning to throw the searchlight of his genius on to the subject of sepsis, and has long since emancipated operative surgery from the clutches of infective complications. He found a truly terrible mortality attending compound fractures and operative wounds. He saw the death-rate fall, as if by magic, when he had traced it to its source and had controlled its cause. He found our large hospitals hotbeds for gangrene, suppuration and pyemia. He has seen those dire accompaniments of wounds successfully banished and hospitals made the safest of all places for operations since the principles he enunciated have been universally adopted. He found surgeons and patients alike dreading almost any operative procedure, on account of the attendant dangers of sepsis, and regarding it as a last resort. He now sees them both, often welcoming operation at the earliest possible stage as the surest and safest means of treatment. He found the abdomen, the large joints and all other serous cavities closed to hopeful surgery on the same account. He has lived to prove them as safe as any part of the body and a prolific field for successful operative treatment. He found surgeons desperate or despondent from continual disappointment, in spite of their great manual dexterity. He lives to see them calm and confident with the hopefulness that comes from the experience of safety. Truly a record such as this places the name of Lister among those

> Whose thoughts, like bars of sunshine in shut rooms, —
> 'Mid gloom, all glory, — win the world to light.

The development and application of antiseptic principles have indeed been the dominant influences at work these forty years in the advance of surgery, and the victory of operative asepsis is now within the reach of every careful surgeon. And in that fact is seen the great practical value of the patient investigations and bold generalizations of Lord Lister. He has brought the life-saving influences of his work within the reach of the humblest surgeon and the poorest patient. And, as an advancing army effects less by the distance that its vanguard has penetrated into the enemy's country than by the subsequent marching up of the rank and file, so the greatest discoveries in surgery can be of but little utility to the race without the co-operation of those who are practising the art. Thus it is largely upon us who are in the ranks that the duty devolves to utilize the new knowledge that our leaders have gained and to carry into our daily work and into the homes of our patients the illuminating results of their pioneer work.

PROPHYLAXIS IN SURGERY.

Vast, indeed, are the fields opened up by the antiseptic method, wherein operative surgery is now reaping its harvests in late as well as in early stages of disease; but it is in prophylaxis that the results of antiseptic precautions are chiefly seen and are of such far-reaching importance. The prevention of the bacterial infection of operative wounds (operative asepsis) is the glory of antiseptic surgery. But when sepsis is already present, or where the potentially-infective mucous membrane of the alimentary canal is involved in the operative area, we must trust in a greater degree to the natural resistance of the tissues, and supplement this not only by an aseptic operative technic, but also by all the means at our disposal for the specific immunization of the body. Such materials as nuclein (for inducing hyperleucocytosis), serum, normal and variously modified (for supplying antimicrobic, antitoxic and various other chemical substances), and bacterial cultures, dead or living (for stimulating the manufacture of such substances in the blood), are on their trial. And may we not hope, thanks to the laborious work of Sir Almroth Wright and others, that we are on the eve of such discoveries in the practical use of vaccines as shall bring both acute and chronic infections under control, and place in our hands another weapon wherewith to prevent the late and often fatal stages of both local and general infection?

Prophylaxis is, it seems to me, as real and valuable in surgery as it is in medicine or obstetrics or even in sanitary science, — a thesis ably maintained from this chair twelve years ago by Dr. Roderick Maclaren,[1] and well worthy of our renewed consideration to-day. The preventive achievements of sanitation are indeed among the most conspicuous of the flowers of civilization of which our profession is justly proud. They form a first line of defense which guards us from the overwhelming attack of such foes to health as plague, leprosy, cholera, malaria, yellow fever and Malta fever, some of which have decimated our population or disabled our army in past centuries, some almost till now. Medicine, which by checking functional derangement is constantly preventing organic disease, has long devoted direct attention to the prophylactic aspect of her work, and, as our second line of defense, has obtained signal victories with regard to smallpox, diphtheria, hydrophobia and other diseases;

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* Address in surgery delivered at the seventy-sixth annual meeting of the British Medical Association.

whilst obstetrics can scarcely have been practised without some regard being had to the prevention of mishaps and complications to mother and child. But when the enemy has reached the third line of defense in surgery, it may seem rather late to speak of prevention. That, however, depends on what it is we hope and try to prevent. When a patient already has a tumor, we cannot, of course, prevent his being the subject of the tumor, but we may hope to prevent its development and fatal termination. Again, in the performance of the necessary operation in such a case, we have it in our power to prevent pain by the exhibition of an anesthetic, to prevent dangerous loss of blood by efficient hemostasis, and to prevent bacterial infection by an aseptic technic. So, when we fail in keeping away the seeds of disease, we may still, perhaps, get at the root of the mischief, or nip it in the bud, and, if not even that, we may be able to prevent its wide spread or some of its most injurious effects.

LEGISLATIVE PROPHYLAXIS.

As civilization becomes more extended and more complex, its attendant dangers are increased. The introduction of machinery of increasing power into more and more industries, the development constantly going on in the potency of the implements of war, and the perils inseparable from ever-increasing rapidity of locomotion render it more and more imperative that the risks to life should be correspondingly counteracted by growing ingenuity and care. Legislation attempts to deal in certain directions with the conditions which are thus brought about, and we have, under the Factory and other acts, regulations for the fencing of machinery, for the prevention of explosions in mines, for reducing the risks of working in various poisonous substances, and arrangements for preventing total loss of wages to those who are disabled by accident from earning them. It is sad to find by painful experience to what an extent unfair advantage is taken of such provisions as these last by some of those for whose benefit the laws were framed. Instead of honestly trying to get back to work as soon as possible, thus proving their manly independence and retaining their self-respect, the injured workmen, in too many instances, try to persuade themselves and their medical examiners that they are incapacitated for work long after their condition justifies such a contention. The hope of obtaining a lump sum as compensation no doubt acts in some cases as a strong motive to profess that no improvement is taking place in their condition. Thus they tend to drift into permanent idleness, bringing comparative poverty on their families and becoming miserable moral wrecks. I fear such cases are sometimes supported in making too much of their aches and pains by members of our profession, who seem to have little admiration for the Spartan character.

> The labor we delight in physics pain,

and I think that, where pain is the sole ground for non-resumption of work, it should not be admitted as sufficient unless it appear to be of a disabling character or degree — a question, I admit, which is seldom an easy one to answer with confidence. It is much to be desired that when compensation cases come before a county court judge, he should habitually be assisted by a medical assessor, whose technical knowledge would always be of value to the judge, and would often prevent an incorrect construction being put on the opinions given by medical witnesses called on opposite sides, and an unfair inference being drawn that they are inconsistent and irreconcilable. A brilliant example of the successful result that occasionally rewards legislative and administrative prophylactic action is furnished, thanks to the enlightened firmness of the Right Hon. Walter Long when president of the Board of Agriculture, by the present banishment from this country in the dog, and consequently in man, of that terrible and uniformly fatal disease, hydrophobia. Many other countries have still to fall back on the second line of defense provided by the no less truly prophylactic vaccine obtained with such admirable patience and insight by the experimental labors of Pasteur.

PROPHYLAXIS IN OPERATIVE SURGERY.

In operative surgery we are specially concerned with the prophylaxis of pain, of hemorrhage, of shock, of sepsis and of death.

Pain. — The prevention of pain during the performance of an operation can now be almost invariably assured by the use of one or another method of inducing anesthesia. For major operations the induction of general anesthesia by means of chloroform, ether, ethyl chloride, nitrous oxide, or a sequence or mixture of some of these agents is a well-established routine which is not likely to be soon replaced, for general application, by any of the more modern methods of preventing the patient's feeling pain. When skillfully and carefully administered by experienced anesthetists, with due attention to the condition of the patient and the nature of the operation, as well as to precautions against respiratory infection, vomiting and overdosing, such anesthetics involve but small risk to life and are applicable to the most serious and prolonged operations on all parts of the body. But they have their drawbacks. The preliminary starvation, necessary for the prevention of dangerous vomiting during the absence of consciousness, has sometimes a decidedly depressing influence on the patient, and the prolonged vomiting which so often follows, in spite of the preparatory starvation, tends still further to lower nutrition by postponing mouth feeding, besides adding greatly to the patient's distress. Some patients, too, have a great horror of being rendered unconscious. Local anesthesia, by the application to mucous membranes of strong solutions of cocaine or some of its allied substances, with or without adrenalin, is of easy application and of eminent value in the case, especially of the eye and of the nose. Weaker solutions of these substances are of very real value and of wider applicability by the local infiltration method, and also by the nerve-regional method. But the recent work of British and other surgeons [2] has opened a wide field for the practical production of peripheral anesthesia by the very efficient means of intraspinal injection, a method of great promise, but which appears at present to have anatomical limitations to the lower half of the body. Its more general adoption will doubtless tend to foster rapidity and gentleness in operating, and thus to prevent their opposites. Whether electricity will provide a means for still more ideal methods of anesthesia it is too early to judge.[3] Something better than the use of morphine is to be desired for overcoming, or preferably preventing, the after-pain attendant on large cutting operations. Very much has already been gained in this direction by antiseptic methods, and something by the administration shortly before operation of hypnotics, especially those of the amide group, but still the first twenty-four hours after a severe operation is usually far from being a comfortable period.

Hemorrhage. — The improvements in the prevention of hemorrhage are certainly amongst the most important that have been made in technical details within my experience. It was after I commenced practice that the Spencer Wells pressure forceps came into use [4] and quickly supplanted the spring artery forceps, the "bulldogs," and the sliding-catch torsion forceps of that day. Since then they have held their own and seem likely to do so, for they leave little to be desired for efficiency and general applicability. By their use hemostasis is rapidly effected by pressure, and in the majority of operations hemorrhage may be almost entirely prevented by their application before the division of each vessel, thus not only saving blood and preventing shock, but also keeping the operative field free from troublesome and dangerous obscuration. Compression, torsion and ligation are readily effected by their aid, though for the last purpose the fenestrated modification is to be preferred. To be satisfactory, however, they must be numerous, and the small number supplied in some of the instrument cases, made for use on passenger ships, seems dangerously inadequate when one remembers that a dozen or more pairs are often needed at an operation. The use of the elastic band, after elevation of the limb, in place of the old screw tourniquet, is also a most valuable means for the prevention of loss of blood in amputations and for securing a clear field of view in the removal of foreign bodies, and in certain other operations on the extremities, though in others it is contra-indicated in consequence of the oozing which is apt to ensue.

Shock. — With regard to the prevention of shock, the analgesia which results from the injection of nerve-trunks and other anesthetic means, and the saving of blood to which I have just referred, constitute two of the most important measures. Warmth, or rather, the avoidance of all causes of its loss, is another important factor in the prophylaxis of operative shock and one for which provision is more habitually made nowadays than formerly. But I fear that in nursing this is still insufficiently recognized as of prime importance. Hospital patients sometimes are chilled after their preparatory bath overnight and supplied with insufficient blankets to quickly restore their body heat; or similar chill results from the preparation of a large area of skin, and the patient does not get comfortably warm again before being placed on the operating table. Post-operative bronchitis in old people may sometimes be attributable to such a cause, though, like pneumonia, it is doubtless often chargeable to a foul state of the teeth and mouth or to an uncleansed inhaler or ether bag. In grave cases, and especially where serious loss of blood has already taken place, shock may be prevented or reduced by intravenous, subcutaneous or rectal saline infusion. Celerity in operating, and especially that which depends not on reckless dash but on knowledge of what to do and where to go, on skill in clean cutting and in rapid and neat suturing, and on good judgment in not attempting more than the patient is well able to bear, is another factor in the prevention of shock, and one which is of scarcely less importance now than in the pre-anesthetic days, especially in operations performed under general anesthesia, on infants and on patients already suffering from sepsis or advanced disease of any sort. The last point I shall mention as prophylactic of operative shock is cheer. Apprehension and fear are most depressing agents, and in all cases where the surgeon advises operative treatment he is morally bound to encourage hope. His personal character and influence here counts for much, and it is even more important for the patient to have perfect confidence in the surgeon than it is for the latter to know it. But perhaps we are insufficiently alive to the terrifying effect on many a nervous patient of being brought into the operation room before being anesthetized. This is a point that must not be ignored in deciding in individual cases between general and regional anesthesia.

Sepsis. — The means for the prevention of operative sepsis and suppuration, so common in my student days that they were looked upon as almost inevitable, except in subcutaneous and in ophthalmic surgery, may be summed up in the one work, antiseptic. It is the method given to the world by Lord Lister, so clear in its principles, so universal in its applicability, so trustworthy in its results. The exclusion of living bacteria from the field of operation is effected on the one hand by washing them away or covering them up, and on the other hand by destroying their vitality by means of heat and of chemical substances. Washing forms the general preliminary preparation; heat is then trusted to for the sterilization of instruments, gloves, cloths, swabs, dressings and almost every article used; but for the skin and mucous membrane of the patient, and for the skin of the surgeon, chemical substances have to take its place, supplemented by a covering of sterile cloths or india-rubber gloves. These last form, I think, one of the most valuable of the comparatively recent improvements in aseptic technic.

Quite equal care has to be taken in the preparation of the hands before the gloves are put on as is necessary without them, but they have the double use of protecting the patient against bacteria (especially the *staphylococcus albus*) lurking in the surgeon's skin and liable otherwise to be transferred to ligatures in the act of knot-tying, and of protecting the surgeon's hands from contamination by pathogenic bacteria from the mucous membranes or other infected tissues of the patient. They are thus equally valuable for operating and assisting, for dressing and examining, in septic and in aseptic cases, and the danger of septic infection from the hands if a glove be pricked or torn does not seem to be great if the glove be at once changed or the prick covered by a finger-stall.

Death. — The prevention of death is, of course, the most important of all the considerations that are constantly before the surgeon's mind, and to which all others are subordinate. Hemorrhage, shock and sepsis being the three chief causes of operative mortality, it is evident that their prophylaxis is of prime importance. Carefulness and judgment are also always necessary, and we must never disregard the dangers that inevitably attend the induction of anesthesia and the performance of any cutting operation. No operation can be undertaken without risk, though in most cases the risk is happily but small. In this, as in the practice of asepsis, we aim at perfection, well knowing that it is beyond our powers to insure its achievement.

PROPHYLAXIS IN SURGICAL DISEASES AND ACCIDENTS.

Eye. Passing now from general operative prophylaxis to the consideration of surgical prophylaxis in particular diseases and accidents, we may take sympathetic ophthalmitis as an example that readily suggests itself. Since 1854, when, in a communication to the Journal of this association,[5] the late Augustin Prichard, of Bristol, advocated the practice and recorded two successful cases, early extirpation of a badly-injured eye has been recognized as the only trustworthy means of preventing the occurrence of sympathetic ophthalmitis in its fellow, and, although treatment on antiseptic lines and by eliminants has so far advanced of late as to make immediate removal of the globe, in accidental wounds of the ciliary region, less generally necessary than formerly, it has not as yet been found safe to supersede excision by any other mode of treatment.

On the important but vexed question of the prevention of ophthalmia neonatorum, a disease which supplies a third of the cases in our blind schools, we shall probably all be agreed that much may be done in this direction by simple cleanly wiping of the lids and the avoidance of contact to the child's first bath-water with the eyes, together with vigilant and continued care with regard to the use of sponges and all other articles likely to convey infection. There seems also to be little doubt that a skilled use of eye-drops of an appropriate silver-salt solution is a real and most valuable prophylactic against the development of the gonococcus when inoculated at birth. But there is strong divergence of opinion as to whether such active germicidal means should be taken universally or only where indicated by the presence of definite signs of infection in the mother, or by well-grounded suspicion furnished by the condition, class or history of either parent. Against the latter view it is urged by some that it is not enough to let the taking of vigorous prophylactic measures depend on the presence and judgment of a medical attendant, and that it is among the class usually attended by a midwife only that there is the greatest need for their adoption. It seems to me, however, that the universal and routine application of eye-drops by midwives would involve grave danger from sepsis, from traumatism and from chemical irritation, and this not only to the eyes of children in danger of birth infection, but to the eyes of all children alike. Such a practice may be wisely followed at lying-in institutions, where the class from which the inmates are drawn is one requiring special watchfulness, and where highly-trained observation and supervision are available to prevent mishaps. In private practice, on the other hand, where the accoucheur is a qualified doctor, he must, of course, be left free to exercise his own judgment in the matter. And where, as in this country, the advice of a doctor is so easily obtainable, the midwife's duty in the matter might well be restricted to calling in medical assistance where the danger of ophthalmia appears to her to be definite, or at the first appearance of disease in the child's eyes. Moreover, there is, I think, a serious moral objection to the proposal to adopt a line of practice which would lead the public to infer that the presence of the gonococcus is suspected in every family. Widespread as this microbe may be, such an estimate would happily be very far indeed from the fact, and I cannot but regard the counsel of the invariable instillation of eye drops in the case of every newborn child as a meddlesome and mischievous proposal.

Gonorrheal ophthalmia in the adult is preventable by the observance of such strict injunctions as should be given by the surgeon in all cases of gonorrhea, supplemented by the use of eye-drops. Smallpox is no longer, thanks to vaccination, a frequent cause of blindness in this country, but in Russia, it is said [6] to be still responsible for more than a fourth of all cases of blindness, a calamity which might be prevented by more general vaccination.

Myopia can no doubt be largely prevented by intelligent school hygiene, in the form of good light, large print, suitable posture and proper distance of work. The exact correction of astigmatism by glasses which are worn all day long is an efficient and most valuable prophylactic against the headaches which so frequently result from that cause, and, in the case of hypermetropia, both eye-strain and strabismus may be prevented by the use of appropriate spectacles. Glaucoma is not, I am afraid, preventable by any definite and practical means, but the permanent blindness to which it so often, and in its acute forms so rapidly, gives rise, may almost always be averted and prevented from becoming permanent by early iridectomy, and, as a temporary measure which every practitioner may easily adopt, the application of a myotic, such as eserine, is often most satisfactory. The great point here, as everywhere in our work, is early and correct diagnosis. How often is acute glaucoma, with its headache and vomiting, mistaken for a bilious attack, and efficient treatment delayed till the tragic result is too late discovered. Blindness may also, as we know, be prevented in the case of many irremovable tumors of the brain by trephining the skull, by which means intracranial pressure is reduced, and not only is blindness prevented, but headache is relieved and a fatal termination postponed.[7] How valuable has been the aid afforded here by the ophthalmoscope, and how truly prophylactic its use!

Naso-pharynx. — Adenoids, like many other diseased conditions, appear to have their origin in the increasingly artificial circumstances of civilized life, and to need for their prevention not only the early treatment of nasal catarrh and the general hygiene of fresh air (by open windows), proper food (not all pulpy), and the abolition of the bottle tube and the dummy-teat, but also more teaching, in a practical manner, of some of those physiological acts, such as nose blowing and nasal breathing, which perhaps come more instinctively to the less highly civilized. The early recognition and treatment of adenoids (not always operative) will often prevent the narrowing of the nares and palate, resulting both in irregular eruption of the teeth and in impeded nose breathing, with its deleterious effects on the development of the chest; on hearing and articulation, and on nocturnal aëration of the blood, with its resulting impairment of attention and memory. Where nasal stenosis is already present, operative means may still be successful in preventing intractable suppuration of the nasal accessory cavities and its fatal extension to the meninges of the brain.

Teeth. The teeth furnish another good example of what may be done by way of prophylaxis. Caries, so prevalent as to be found in over 95% of the mouths of our school children, may be largely prevented by proper cleansing of the teeth after every meal; toothache and alveolar abscess by the early clearing and filling of carious cavities; indigestion and other troubles incident to loss of teeth by the application of artificial dentures; cancer, quite occasionally, by their removal; whilst many a case of oral sepsis and not a few of gastric ulcer and pneumonia might be prevented by more careful attention to the cleansing of the mouth and teeth, especially during fever and in bedridden patients.

Ear. — In the surgery of the ear we recognize the possibility of preventing the occurrence of chronic otorrhea (or suppuration of the mastoid antrum) by early antiseptic treatment of suppurative otitis media, whilst, when established, it may still, by one of the most valuable of prophylactic operations, be prevented from setting up cerebral or cerebellar abscess, purulent meningitis or septic thrombosis of the sigmoid sinus, and in this last condition, again, operation may prevent the occurrence of pyemia.

Chest. — Referring to the chest, the prevention of its contraction and that of the affected lung after empyema depends mainly upon the early evacuation of the pus before the pleura becomes thickened, and its visceral layer firmly fixed.

Abdomen. — The abdomen is now the happy hunting ground of the operating surgeon, and, as we might expect, it affords many opportunities for the exercise of preventive surgery. Gastric and duodenal ulcers and strictures at or near the pylorus are of common occurrence and frequently terminate fatally, whether by hemorrhage, by perforation, by mechanical obstruction followed by malnutrition, or by the growth of cancer. These fatal results may in numerous cases be averted, as well as relief given to such distressing symptoms as pain, vomiting and inanition, by the operation of gastro-jejunostomy and similar procedures. Stones in the gall bladder, themselves usually the result of the abnormal presence there of bacillus coli or other bacterium, are liable to cause hepatic colic and obstructive jaundice by passing into the common bile duct, and to induce cholecystitis or cholangitis by their continued presence, but both of these serious complications may be prevented by the recognition of the symptoms of cholelithiasis in an early stage, followed by the simple operation of cholecystotomy.

Hernia affords a typical example of the benefit to be derived in the practice of surgery by prophylactic treatment. The dangers of neglected strangulation are now so generally appreciated in the profession that patients are commonly advised by their family doctor to accept the very slight risk consequent on an operation for cure during a quiescent period in order to prevent the very grave risk of strangulation. Indeed, the inconvenience and expense attending the lifelong wearing of a truss are enough in themselves to make most subjects of hernia gladly accept an operation of such little danger in order to avoid them. A general acceptance of the saccular theory of the origin of hernia (supported, as it seems to me, to be, by the excellent results obtained in the experience of so many surgeons by operations involving little more than excision of the sac) will probably lead to still further advance in the earliness with which operation is resorted to in all the usual forms of hernia. The prevention of ventral hernia as a result of laparotomy lies mainly in a wise planning of the incision, according to the needs of the case, and the obtaining of aseptic primary union throughout the wound, the scar of which must then be allowed time enough to become firm (six or eight weeks at least) before being subjected to any considerable strain. Where the conditions are favorable, probably suture of the divided structures in separate layers gives the best results, suture material being used which will not become too soon absorbed; but where much tension is present and the peritoneum or the adjoining fascia tears and will not hold the sutures, it is safer to trust to through-and-through sutures of strong silkworm gut. Muscle-splitting, instead of cutting, is frequently a valuable expedient to adopt with a view to the prevention of ventral hernia. When drainage has to be provided for, it is well, with the same object, to carry it out through separate incisions. A sufficient number of cases of intestinal obstruction are due to bands and adhesions which have resulted from former laparotomies to make it worth while, by way of prevention, to take every care, when opening the abdomen, to damage the peritoneum as little as possible, whether by rough handling, by stripping up, by long exposure to the air, or by contact with septic fluids or irritating chemical antiseptics.

Inflammation of the appendix is now so prevalent, and so frequently of a dangerous type, that it is hardly surprising that serious suggestions should have been made for its prophylaxis by the radical method of the universal removal in health of an organ of so little apparent use and possessed of such dangerous possibilities. Were its uselessness beyond question, were the operation for its removal attended with no more risk, expense and other inconveniences than ordinary antivariolous vaccination, and were the incidence on the population of appendicitis anything approaching that of smallpox among the unvaccinated, the suggestion might deserve our careful consideration, though the analogy between the two cases is far from being a close one; but none of these propositions can be accepted as true. Two other suggestions of definitely restricted applicability have been made for the removal of the uninflamed appendix. One is that it should, as a rule, be amputated whenever in the course of an operation it is exposed and is judged, from its appearance or from its proximity to diseased structures or to parts being operated on, to be in more than ordinary danger of becoming inflamed. The other is that its removal should be effected during the quiescent or interval stage, when an attack of appendicitis has been recovered from without operation. Both these suggestions seem very reasonable, and I, in common with others, have frequently acted on them. But with regard to the second suggestion, let us note that in order that this line of treatment may be carried out it is necessary that the patient should survive the illness. Herein lies the chief weakness of the position — not, indeed, the sole weakness, for another weak point is not infrequently found in the unwillingness of the patient, who was gone more or less favorably through a first attack, to face again, and this time in cold blood, the loss of time and money, the discomfort and the inevitable though very small risk attaching to the operation. But the chief weakness of this plan of treatment is, I repeat, that it is quite problematical at the beginning of an attack whether or not the subject of it will ever reach the interval stage. A high rate of mortality appears to prevail at present in this disease. Who of us has not seen cases die whilst waiting for the quiescent period in which to operate? Is it not time that we learned the lesson of the uncertain course of any, and especially of a first, attack of appendicitis? The interval operation is a most excellent one when that stage is present. Its mortality is so low that many operators can show long series of cases without a death, and the recoveries are usually rapid and perfect. But ought we to wait for the interval? I think not, especially in a first attack, if a positive diagnosis of appendicitis can be made sufficiently early to allow of operation being performed within twenty-four hours of the onset of the symptoms. And this should not be difficult in a very large proportion of cases. The suddenness and severity of pain and other symptoms are, in most instances, though certainly not in all, sufficient to induce the patients or their parents to send early for medical advice. And the signs of acute peritonitis, and usually of its location in the right lower abdomen, are not easily overlooked or mistaken, whilst the cases are comparatively few, except in women, in which any other organ than the appendix is the cause of acute local peritonitis. The diagnosis made and the abdomen opened within twenty-four hours of the initial symptoms in a first attack gives the patient, I am convinced, the best possible chance for rapid and permanent recovery, whilst by this early removal of the offending appendix he is insured against the unknown risks of its present inflammation, and is safeguarded from any attack in the future. The mortality attending operation in this early stage appears, as far as can be judged from the comparatively small number of series of cases hitherto published,[8] to be almost, if not quite, as low as that of appendicectomy during the interval stage, and any difference there is may probably be less fairly attributed to the stage at which the operation is performed than to the fact that in the immediate operation series there will be included those unfavorable cases which would under no other treatment have survived. The objection to operating on a subject of septic fever is, I think, fairly met by its being almost certainly possible at this early stage to remove the appendix in the simple manner in which it is removed in the quiescent stage, and thus to rid the patient of his septic focus. Within twenty-four hours (and the more this period can be reduced the better) we shall find no widespread recent adhesions, no pus, or only a minute quantity, no perforation, nor any such degree of gangrene as to interfere with complete removal of the organ, and if it be a first attack, we shall meet with no difficulties caused by old and firm adhesions. The result is that the patient's illness is cut short; he and his family and medical attendants are saved from the fear of abcess and other complications; the anxiety with regard to the issue is soon relieved, and there is no looking forward to a second operation in the future.

Now let us contrast with this what is so often allowed to happen after inflammation of the appendix has been early and correctly diagnosed. In one class of case the patient is not very ill, and, after a single dose of morphine, is treated by the expectant method. By the third and fourth day his temperature falls to normal, but a few days later it again rises, and it soon becomes evident that an abscess has formed about the appendix. As pain and fever increase, a consulting surgeon is now for the first time called in. The abscess is drained and the patient probably gets well quickly, but, unless the appendix has been removed, he has still to submit to a further operation a little later, or to remain possessed of a damaged and dangerous organ. In another class of case the patient is very ill and in great pain from the first, and is unwisely treated with regularly repeated doses of morphine for two or three days. His pulse then runs up, and the recurrence of other unfavorable symptoms leads to the surgeon's now being called in. As the case is urgent, he operates at once, but only to find a gangrenous and perforated appendix with spreading or generalized peritonitis. With free drainage and rectal irrigation in the raised posture, the patient may perhaps recover, but it is a terrible experience for all concerned. In yet other cases various dangerous and often fatal complications arise. Pelvic, lumbar or subdiaphragmatic abscess may occur; the uterine appendages may become infected; portal pyemia or intestinal obstruction may be set up. In a much larger proportion of cases, however, good recovery no doubt takes place, but even then the subject of the illness may well feel concerned at the uncertainty of his prospects, and sometimes at his being refused by a life assurance office, till the lapse of years or a successful appendicectomy has diminished the risk on his life. I do not maintain that the removal of every inflamed appendix during the first twelve or twenty-four hours of its first attack is an altogether ideal method of prophylaxis against complications and recurrence, but I am convinced, from my own experience, that it is an efficient method, and the safest and best that is at present practicable. We may look forward to the time when such advances may have been made in its etiology as to provide a less clumsy means of preventing inflammation of the appendix than its amputation, but that time is not yet.

Pelvis. — Passing on to the urinary organs, we find ample scope for prophylaxis. Sepsis here is so serious and so difficult to avoid that it behooves us to exercise every care and to adopt all practicable precautions against carrying infection into the bladder and beyond by our instruments. Disinfection of such catheters as would be spoiled by boiling can be effected by the vapor of formaldehyde, by means of special apparatus, and the internal exhibition of the ammonium derivative of this substance (hexa-methylene-tetramine) seems to be of very real value in the prevention of infection of the urinary passages. A method of preventing septic cystitis in cases of fractured spine which has seemed to me useful in a few cases is that of performing suprapubic puncture of the bladder, and leaving in a metal tube for permanent drainage. In this sad accident there seems no sufficient reason why the sufferer should be deprived of the ordinary preventive measures taken by nurses against bedsores, since no amount of fixation and rest suffices to induce Nature to restore function to a crushed spinal cord. The danger, in prostatic retention, of completely emptying by a catheter a bladder which has for months harbored a considerable quantity of residual urine is not, perhaps, as widely known as it ought to be for the prevention of a fatal result through blood-vascular disturbance of the kidneys. The prevention of the risks and inconveniences of catheter life can usually be secured with comparatively little danger by the modern operation of suprapubic prostatectomy, and, generally speaking, the occurrence of pyelonephritis may be prevented by the reasonably early and efficient treatment of stricture of the urethra, enlarged prostate and stone in the bladder. The cystoscope is a great prophylactic; many a useless operation on bladder or kidney might be prevented by its more general use. Here again the septic risk should be borne in mind of washing out a bladder affected by new growth. With regard to the ovary and uterus, it is notable how rare are now cases of advanced ovarian dropsy, which were so common in my student days. That distressing condition has been prevented by the much earlier and almost uniformly successful removal of ovarian cystoma in an early stage. What a happy contrast to the state of things, which I well remember, when ovariotomy was so dangerous that cases were left till the abdomen was enormously distended and its contents and those of the chest dangerously pressed upon before that operation was resorted to, or were tapped and retapped till sepsis closed the scene. Similarly the long, disabling invalidism of woman's life, whilst waiting for the menopause in menorrhagia due to myoma, is now prevented by earlier operation, whilst by the same means she is saved from the dangers of the degenerative stage of that disease.

Extremities. — Turning to the extremities, we may contrast the large proportion of amputations performed for diseases of the joints and for compound fracture forty years ago with the prevention of such loss of limbs since brought about by antiseptic treatment. We see also with satisfaction how much the period of disabling stiffness of joints and wasting of muscles after fracture has been curtailed by modifications and improvements in the form and application of splints, and by the practice of early movement of joints and of massage; and how in many cases limbs presenting fractures, which could be but very imperfectly dealt with by means of splints alone, may be restored to functional perfection with the additional aid of wire or screws. By such methods of treatment, long-continued, or even permanent, disability is prevented. In wounds of the forearm and other parts much functional disability can often be prevented by careful suture of divided nerves and tendons, a method which has a further application in preventing the permanence of some of the effects of peripheral paralysis. Gangrene of the foot may, by early amputation above the knee, be, in most instances, prevented from running a fatal course. And recently there have been recorded brilliant attempts to prevent the onset and spread of gangrene — in one case by removing an embolus from the bifurcation of the aorta, and in another by anastomosing the proximal end of the divided femoral artery to the distal end of the divided femoral vein.[9]

Cancer. — The prevention of cancer cannot reasonably be expected till much more is known than at present as to its real cause or causes, but we may well indulge the hope that some means of prophylaxis will ultimately result from the patient investigation which is now being carried on as to the nature of this dread disease. What we can do at present is, with respect to the public, to educate them not to regard pain as the *sine qua non of* cancer, or as the only important thing in life to avoid, and not to neglect any definite and persistent symptom of abnormality or ill-health, be it lump, sore, discharge, hemorrhage or anything else; and, with regard to ourselves, to look suspiciously on all new growths, however innocent they may appear; to neglect no rectal or other internal examination that may be indicated by the symptoms; to regard ulcers of the tongue and lips, vulva and prepuce as having a precancerous stage, most suitable for operation; to consider all growths in the adult breast, bladder and rectum as at least potentially malignant; and, until better methods of treatment are known, to advise, as an almost invariable rule, the anatomically complete removal of all cancers diagnosed early enough to give good hope of success. In such ways we may hope to often prevent recurrence, and occasionally we may do something more truly prophylactic, as by treating the superficial glossitis produced by syphilis or by tobacco smoke, by stopping the use of an unwaxed clay pipe, by removing gallstones, by excising pigmented moles and senile warts, or by performing circumcision on a child or adult. Every case of epithelioma of the penis that I have ever met with has furnished a history of pre-existing phimosis.

Syphilis. — Of syphilis and venereal disease in general, let me say that the true prophylaxis lies in

Self-reverence, self-knowledge, self-control,

combined with a due regard for the inalienable rights and deepest interests of others, the claims of the weak and the dictates of honor. I do not forget that syphilis is sometimes acquired in a non-venereal way, as by members of our own profession in the faithful discharge of their duties. To those who thus suffer on behalf of their patients our sympathies go out, and for them and for the vast number of other innocent victims of man's inconsiderate selfishness we may heartily wish whatever benefit may be derivable from the experiments in inoculation with the treponema pallidum, which, for the last three years, have been so arduously carried on by Professor Neisser and his staff.

Suicide. — Similarly with regard to cut throat and other forms of suicide, so shockingly prevalent at the present time, we need, as the true preventive, higher ideals of life, such occupation and recreation as will make life of more value both to its possessor and to those who come under the influence of its example, a truer, more grateful and more hopeful estimate of the worth of human life, a wider and a deeper experience of

The mighty hopes that make us men.

But here again we must remember that in many a case the usual verdict of "temporary insanity" may go nearer to the truth than the outward circumstances of the case may seem to warrant.

THINK PROPHYLACTICALLY.

The field of surgical prophylaxis is indeed a large one, and even such a brief and fragmentary glance at it as we have been taking may help us to realize something of its wide extent and to consider it more habitually worth our while to think prophylactically. Hemorrhage, shock and sepsis are already largely preventable in our operative work, but a grave mortality still results from the impaired vitality of the patient at the time when, in too many instances, operation is first considered. It is here, we may be confident, that improved practice will insure better results, as is abundantly evidenced by the lowered mortality attendant on such abdominal operations as herniotomy, ovariotomy, colotomy and appendicectomy, when undertaken early enough to prevent the effects of commencing strangulation, torsion, obstruction or inflammation. It is on the family surgeon that the chief responsibility must rest to be early in his diagnosis where prevention seems the rational treatment to attempt, whilst, with the same object in view, the essential requisite in the diagnosis of the consultant is exactness.

The diseases to which we as a profession are said to be specially liable are such as are traceable to overwork and strain. May they not be largely prevented by our taking one day's rest a week, as regularly and as fully as the interests of our patients admit, and a longer holiday once a year? By all means, let us attend to necessary work on Sundays just as on weekdays, but our patients have no right to put extra work on us on that day merely to suit their own convenience and with a disregard of the fact that it is often the only day in the week when a busy doctor can get a quiet afternoon. Why should it be supposed that he is more exempt than others from the need for periodical rest for his body and refreshment for his soul?

There is also a mental condition which we must try to prevent at least as much as strain, and it needs our constant effort to prevent rustiness in our knowledge, and failure in our attempt to keep up with the advances made in our profession or in the particular branch of it that we practice. The value of hospitals and of universities, of post-graduate courses and of medical societies, of books and periodicals, of annual and of branch meetings of this great association, and of the various opportunities we all enjoy for social and professional intercourse is indeed great in warding off this deplorable state of mind, and in making our professional life hopeful and happy to the end.

Prophylaxis is always full of hope. It is founded on early and correct diagnosis, together with the prognosis which is the outcome of knowledge and experience, and which enables us to prophesy because we know. But in much of our surgical work to foretell should be to forestall. We need to recognize what is ahead of our patients, to provide for the emergency, to anticipate the complication, to avoid the danger. Pessimism and despair, born of ignorance, can lead but to disaster, whilst optimism and hope must always be right, when founded on knowledge and insight. "Your intelligence," says Ruskin, "should always be far in advance of your acts." We must set before ourselves an ideal, true to Nature, but too high for immediate and habitual attainment, that so both our individual and our collective work may be more worthy of our calling, and that our art may be more hopeful and more helpful to suffering humanity.

Not failure but low aim is crime.

We must long for real progress, but if we would attain it

Our lives must climb from hope to hope
And realize our longing.

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Original Articles.

THE IMMEDIATE TREATMENT DEMANDED IN CERTAIN OF THE MORE SERIOUS OCULAR CONDITIONS THAT ARE FREQUENTLY FIRST SEEN BY THE GENERAL PRACTITIONER.*

BY FREDERICK E. CHENEY, M.D., BOSTON.

While a certain number of men in general practice have given special attention to ophthalmology and are prepared to treat most of the cases coming under their care, the larger proportion, if I can judge correctly, prefer to limit their practice in this branch of medicine to its simpler diseases and to transfer those of a serious nature to the oculist. It nevertheless not infrequently happens that the family physician, from one cause or another, is obliged temporarily to assume the responsibility of a case that is of undoubted gravity, and the question of the immediate and proper treatment required under such circumstances is naturally an important one.

ACUTE GLAUCOMA.

A disease in point, and one that can justly be ranked first among what may be classed as emergency eye cases, is acute glaucoma. No man in general practice will willingly treat a case of acute glaucoma longer than is absolutely necessary, for the reason that the only curative treatment is operative, and the longer operation is delayed beyond a certain period the less favorable the outlook for the restoration of vision. It is, nevertheless, the family physician who is usually first called in these cases, and the general upset, that is, the severe pain, the nausea and vomiting so often accompanying the disease and prostrating the patient will at times overshadow and obscure the seriousness of the ocular condition. It is essentially a disease of middle life and old age, and its symptoms are dependent upon a rapid and very considerable increase in the intra-ocular tension. The pain in the eye and head, the nausea frequently accompanied by vomiting, the ocular injection, the rapidly failing vision, often reduced to the ability to count fingers within twenty-four hours; the increased tension, the haziness of the cornea, the narrowing of the anterior chamber, and the enlargement and immobility of the pupil all point to a serious condition and one requiring prompt and energetic treatment. The value of certain of these symptoms in making a diagnosis of acute glaucoma and in differentiating it from iritis, a disease with which it is often confounded, is, of course, dependent upon one's experience as an observer of pathological conditions in the eye. A man whose experience has been limited may or may not be able to make out an increase in the ocular tension. The same may be said as to the narrowing of the anterior chamber, and, unless it has become marked, the haziness of the cornea as well. The condition of the pupil, however, will be easily recognized and may be regarded as the keynote of the situation. In iritis, it is small and inactive. In glaucoma, it is larger than the pupil of the other eye, usually much larger, and is sluggish or absolutely inactive to light. Given, therefore, a congested, reddened eye, an enlarged, inactive pupil, rapidly failing vision, pain and nausea, there is little chance of error in making a diagnosis of acute glaucoma. Severe pain, nausea and vomiting are not always prominent symptoms, but it is especially these cases, where the general disturbance is so severe that the patient takes to his bed, that are least liable to receive the prompt treatment so essential in preventing absolute, incurable blindness. The immediate treatment demanded in such a case is the use of a myotic in an effort to contract the pupil and relieve temporarily the symptoms until arrangements can be made for an iridectomy. It is well to begin, I believe, with a 2% solution of pilocarpine nitrate, instilling two or three drops into the eye every half hour. If at the end of four or five hours no contraction of the pupil is apparent, a 1% solution of the stronger myotic, eserine sulphate, should be substituted and used with equal frequency. The acute symptoms will generally, but not always, lessen in intensity after a few hours, and there may be a very considerable improvement in vision. With this improvement, it is well to reduce the frequency of the myotic to once an hour or even to once in two hours, as the conditions may seem to indicate. Because of the intense pain in some of these cases, morphine may seem advisable, but it is well to avoid giving it when possible in order that the effects of the myotic may be more satisfactorily observed. Hot fomentations are sometimes of value in adding to the comfort of the patient, and an early saline cathartic is beneficial in this as well as in most acute ocular disturbances. Iridectomy should not be delayed for more than three or four days, even when the symptoms yield readily to a myotic, and more prompt interference is demanded if they persist in intensity under this treatment. It is sometimes difficult to make the patient believe that operation is imperative if vision returns and these severe symptoms rapidly disappear, but strong assurance can be given that the attack will recur unless the eye is operated upon and that early operation gives the best visual result.

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IRITIS.

It would be unnecessary, perhaps, to classify iritis among the more serious ocular diseases if it were not for the fact that it occasionally gives rise to an extremely grave condition where appropriate treatment has been delayed. In the absence of pain, for example, the patient may fail to report to the physician until the pupil has become almost completely adherent and vision greatly impaired by exudate onto the anterior surface of the lens. In other cases the trouble is mistaken for conjunctivitis and the result may be equally unfortunate. When the points made in the diagnosis of this disease in the usual textbooks of ophthalmology are considered, one wonders how it is possible to mistake it for conjunctivitis, but the "characteristic symptoms" in this, as in many diseases met with in the practice of medicine, are not infrequently most conspicuous in their absence. Every oculist meets with cases of iritis where he hesitates in making a positive diagnosis of iritis until he has instilled atropine or some other mydriatic and found iritic adhesions to be present. Of the usual symptoms, supra-orbital pain may be entirely wanting, intolerance of light and increased lachrymation insignificant, the circumcorneal injection very moderate, the discoloration of the iris a little doubtful, the pupil not greatly contracted and its reaction to light fairly good. Such cases are not the rule, however, and there are usually a sufficient number of iritis symptoms present to make the diagnosis a practical surety before a mydriatic is used. The symptoms most constant and to be depended upon are the pinkish zone of injection surrounding the cornea in connection with a contracted pupil that reacts sluggishly or not at all to light. Added to these we shall probably find a discoloration of the iris and a greater or less degree of supra-orbital pain, but the first two symptoms in the absence of any corneal lesion almost invariably means iritis. It is not difficult to eliminate conjunctivitis when these symptoms are present, and if any doubt exists in the mind of the physician it is better to instill atropine, or by preference a more transient mydriatic like the hydrobromate of homatropine (2%), and determine the existence or non-existence of iritic adhesions. While the absence of adhesions does not absolutely exclude iritis, other symptoms of the disease will usually quickly become prominent after a mydriatic has been used. The essential treatment is, of course, the use of a mydriatic, usually atropine-sulphate, of sufficient strength and frequency to dilate the pupil as widely as it is possible to dilate it. To prescribe a ½% or even a 1% solution for the patient to use at home does not, as a rule, meet the emergency of the case. He should be kept at the office and a drop or two of a 4% solution placed on the inner surface of the lower lid, and this repeated four or five times at ten-minute intervals. Under this treatment, many, if not all, of the existing adhesions will usually give way and there is little danger of fresh adhesions taking place if the pupil is now kept dilated by a weaker solution of this drug. It is important in using the stronger solutions of atropine to have the patient keep the end of the finger firmly pressed upon the inner angle of the eye for three or four minutes after each instillation. This will prevent in a great degree the escape of atropine, by way of the tear passage, into the nose, and the consequent dry throat and other mild symptoms of poisoning which occasionally take place. Judging from cases seen in consultation, the atropine solution prescribed by men in general practice, for home use, is often not of sufficient strength or used frequently enough to give the best results. A 1% solution is none too strong, and instilled three or four times a day will meet the requirements of the average case. A pupil cannot be too widely dilated in iritis, and a dryness of the throat, which is the only unpleasant symptom to be expected, can be minimized in the manner just mentioned. There is one point in connection with the use of atropine in this disease that I have never seen mentioned in any literature on the subject, although it has undoubtedly been noted by most men who have cared for any considerable number of these cases, and that is, that supra-orbital pain is not infrequently absent, or at least very moderate until atropine is used, when it may become severe and so continue until the inflammation begins to subside. It is, therefore, wise to inform the patient of this fact in the beginning and to impress upon him that this is unavoidable and no indication for discontinuing the treatment. Another remedy that is at times of great value in the early stages of the disease is the application of leeches to the temple. They are especially indicated in those cases where the pupil fails to dilate widely, not so much because of the existence of adhesions, as to the intense degree of iritic congestion. The importance of discovering and treating early the disease upon which the iritis is dependent, of the use of a saline cathartic, of hot fomentations for the relief of pain and of sufficiently protecting the eyes from the irritating effects of bright light are well-recognized routine procedures and require no detailed consideration.

OPHTHALMIA NEONATORUM.

The subject of ophthalmia neonatorum as a cause of blindness has been frequently presented to the medical profession, and the present work of a committee of the American Medical Association in an effort to secure uniform legislation in the various states for the better control of this disease well emphasized its importance. Blindness in a child is a pathetic condition, and especially is this so when it results from a disease that almost invariably terminates favorably if recognized and properly treated in the beginning. In other words, blindness from ophthalmia neonatorum in a very large proportion of the cases means blindness from neglect. While it is probable that these patients are better cared for in Massachusetts than in the majority of the states, one reason being that midwife practice is not common in this community, blindness from this cause is nevertheless much more frequent than is generally supposed. At the Boston Nursery for Blind Babies, as a single example, Dr. R. G. Loring informs me that there are 51 patients, and that in 31 of these blindness is directly traceable to this disease.

The nature of the disease is well known. It is a purulent infection of the conjunctiva, in the large majority of cases gonorrheal, and the infecting organism enters the child's eye during the passage of the head through the vagina or soon after birth. For obvious reasons it is more prevalent among the poorer classes than among the rich and well-to-do. It is doubtful if many oculists in this neighborhood average more than one case of the disease a year in private practice, while in the larger charity clinics it is quite the rule to see two or three in a single week. Last year at the Massachusetts Charitable Eye and Ear Infirmary we treated 171 cases, all of them as indoor patients. It may not be out of place to call attention to the fact that the facilities for treating this class of cases at the infirmary are not excelled, if they are equaled, by any institution in the world. The Gardner Building for infectious and contagious diseases is practically completely separated from the main building, the only connection being a basement passageway. The third floor for contagious general cases has a separate stairway from the basement, so that there is absolutely no connection between this ward and the first and second floors devoted to infectious eye cases. Of the twenty-seven beds, the large proportion are available for ophthalmia neonatorum patients, and this department is not only thoroughly equipped for the care of the eyes, but for the general care of these unfortunate babies as well. The symptoms of the disease need not be referred to in any great detail. It is simply necessary to remember that an inflammation of an eye in a newborn babe accompanied by a purulent discharge is almost without exception ophthalmia neonatorum. As a rule, it appears between the second and sixth day after birth, but when there is a want of cleanliness and care, infection occasionally takes place later. The great danger is of infection and ulceration of the cornea, and while it may develop at any stage of the disease, it is more liable to occur in the first and second weeks, when the discharge is more abundant and virulent. It is not very exceptional to have cases report with the history of an inflammation of but a week's duration and to find one or both corneæ ulcerated to such a degree that vision is practically destroyed, and with little or no chance of its being restored by treatment or operation. The importance of early treatment, therefore, cannot be too strongly insisted upon. While it will be generally admitted that the oculist is better qualified to treat these cases than the general practitioner, it is, nevertheless, the general practitioner who usually first sees them and is often forced by circumstances to assume the immediate care and responsibility. If I may be permitted to wander a little from the subject of this paper, I will say just a word in regard to preventive treatment. The well-known Créde method, that is, dropping one or two drops of a nitrate of silver solution (1% or 2%) into the eyes immediately after washing them at the time of birth, is undoubtedly of great value and is systematically used in many of the lying-in hospitals. Among private patients, it has never been very generally adopted, perhaps for the reason that it sometimes causes considerable temporary irritation and the physician hesitates in making it a routine practice. With the newer silver salts, however, the question of irritation can be eliminated. For example, a 25% solution of argyrol is practically non-irritating and will cause no more feeling of discomfort, as a rule, often not as much, as a 3% solution of boric acid. To instill four or five drops of a 25% solution of argyrol into the conjunctival sac of every new-born babe would be a simple and I believe a very efficient means of prevention. Among certain classes, neglect of all matters pertaining to health and cleanliness is, of course, the rule, and it is to be expected that an inflamed eye will make little impression until the disease has become well advanced. It is this delay of the family in promptly notifying the physician which is undoubtedly accountable for many lost eyes. To make any appreciable change in the nature of these people is, of course, not to be expected. It should, nevertheless, be the duty of every physician attending a confinement case to try and impress upon the more intelligent members of the family the importance of sending for him at once if the eyes become inflamed and discharge matter.

While there is naturally some difference of opinion among oculists as to the care of these cases, they practically all agree that keeping the eyes clean and free from pus is the most important factor in insuring a good recovery. This means washing the eyes out every fifteen or twenty minutes with a boric acid solution, and is most satisfactorily carried out when two nurses are in attendance, one for day and the other for night duty. When nurses cannot be promptly obtained, or circumstances render their employment an impossibility, two members of the family or friends should be carefully instructed in the work until better arrangements can be made. In cleaning the eyes, the inner angle and edges of the lids, which are usually tightly shut, should be freed from discharge by means of a bit of absorbent cotton wet with the solution. If the lids are then separated most of the retained secretion will escape and what remains can easily be dislodged by taking another bit of cotton thoroughly saturated with the solution, holding it an inch or two above the eye and then by pressing it allow a stream to flow gently into the conjunctival sac. The lids should be dried and four or five times a day it is well to apply a little simple ointment to their edges, not only to prevent them from becoming glued together, but also for the reason that they are liable to become irritated from the constant washing. There is one caution which should be given to the nurses or attendants doing this work that is of the greatest importance, and that is frequently neglected, and that is, to have their fingernails trimmed as short as possible, for if a slight abrasion of the cornea be made by a fingernail in the process of washing the eye or separating the lids, it will be quickly followed by infection and ulceration. The constant cleaning of the eyes, night and day, seems to have little ill-effect upon the general condition of these babies. They soon take it as a matter of course and eat and sleep as under usual conditions.

Next in importance to cleanliness is the use of some silver salt, and the question as to what preparation gives the best results is still a matter of discussion. At the Massachusetts Charitable Eye and Ear Infirmary we have practically given up the use of silver nitrate, replacing it by the newer salts, protargol and argyrol. In a paper[1] read before the American Ophthalmological Society two year ago, Dr. Myles Standish gave some interesting comparative statistics. Of 50 cases treated with silver nitrate there was subsequent infection of the cornea in 3 cases, or 6%. Of 150 cases treated with protargol, there was subsequent infection of the cornea in 3 cases, or 2%; and of 201 cases treated with argyrol there was subsequent infection of the cornea in 4 cases, or 2%. These results certainly prove conclusively the value of the newer and less irritating silver preparations in the treatment of this disease. A 25% solution of argyrol may be used freely every four hours and in cases of exceptional virulence even oftener than this with advantage. In applying the remedy, the child should be placed flat on the back and the head so turned that the solution will not quickly escape from the eyes. The lids being separated with the thumb and finger, six or eight drops should be instilled with an eye-dropper and there need be no fear of harm in using even a larger quantity. Careful instructions must be given, however, that the end of the dropper is not brought in contact with the cornea or the instillation made with too great force. This treatment, frequent cleaning of the eyes and the use of argyrol, if it can be thoroughly and systematically carried out, will, with rare exceptions, insure a perfect recovery. I cannot but urge, however, the advisability of transferring the cases met with among the poorer classes to the Massachusetts Charitable Eye and Ear Infirmary or some similar institution as soon as it can possibly be arranged. This is advisable not only for the good of the child, but for the safety of the other members of the family as well. For the fact must not be lost sight of that the disease is usually gonorrheal and that if the eye of an older child or an adult becomes infected it means an inflammation of even greater seriousness than when present in the eye of the new-born babe.

PERFORATING WOUNDS OF THE EYE-BALL.

A class of cases that I wish to refer to briefly, in concluding this paper, are the perforating wounds of the eye-ball. A perforating wound, that is, a wound made by some foreign substance passing through the cornea or sclera, must always be regarded as a serious condition whatever the nature of the object causing the injury. Not infrequently the immediate result is a blind and deformed eye and enucleation is the only question to be considered. More often, however, an effort must be made to save an eye that will be of some value as an organ of vision, or if this is impossible, one that is at least to be preferred to an artificial eye and that will not endanger its fellow. The larger majority of these patients are working people, mechanics, stone-cutters and the like, and while a certain number immediately enter a charitable institution and come under the care of an oculist, many others, for the reason that they live at a distance, or for some other cause, are first seen by a man in general practice. It is to be expected that a perforating wound will be followed by inflammation, although it is by no means an inevitable result. At times a general suppuration of the greatest intensity will make its appearance soon after the injury and treatment seems absolutely of no value in allaying its progress or in preventing a destruction of the globe. In the general run of cases, however, such an unfortunate termination is not to be looked for, and if appropriate treatment can be received early, that is, within four or five hours of the injury, the outlook is certainly much better than where treatment is delayed for forty-eight or even twenty-four hours.

It will, of course, be understood that the following suggestions are in the nature of early emergency treatment and that various modifications and changes may be demanded if a case is under one's care for any length of time.

First. — To lessen the chances of infection, or at least further infection, the lids and their immediate neighborhood should be thoroughly cleaned and the conjunctival sac irrigated with a boric acid or some other mild solution. It is impossible to make the conjunctival sac absolutely sterile, but if the patient is placed on the back, the lids separated and the eye washed out with three or four dropperfuls of a boric acid solution, it will at least be clean.

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[1] "Silver Preparations in Conjunctival Diseases." Also published in Ophthalmology, August, 1906.

Second. — A 1% solution of atropine should be instilled three or four times at five-minute intervals for the reason that iritis will develop in at least 80% of these perforating injuries. If atropine is not used, and numerous iritic adhesions take place, as they frequently will within the first twenty-four hours, they may very seriously interfere with the future successful treatment of the eye. If the anterior chamber is evacuated, the pupil will not dilate until it is re-established. It is, nevertheless, advisable to use atropine so that its effects may be obtained as early as possible after the chamber begins to refill.

Third. — Some simple non-irritating ointment, a piece the size of a pea, should be placed on the inner surface of the lower lid and the eye then bandaged (except in certain injuries that I shall refer to presently). A valuable ointment for this purpose is the so-called White's Ointment, compounded as follows:

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Hydrarg. bichloride,	gr. $\frac{1}{12}$
Sodii chloride,	gr. $\frac{1}{2}$
Petrolati,	ʒiv

Fourth. — A good dose of Epsom salts, calomel or some other active cathartic should be given, and,

Fifth. — A leech to the temple is good routine practice and at times is of the greatest value.

When the eye is bandaged, if the pupil is well dilated, it is usually unnecessary to change it oftener than twice a day, the eye being thoroughly washed out, atropine instilled and the ointment applied at each dressing.

In injuries from dynamite, power explosions, firecrackers, etc., where the conjunctiva and the lids are usually more or less burned and lacerated, exceptions are to be made in this treatment, especially as regards bandaging. These cases are very liable to develop a mucopurulent conjunctivitis and many eyes are lost by a secondary infection of the cornea. Closing up the eye by bandaging under such circumstances would certainly add to the danger of infection. From my experience I believe the best results are to be obtained by washing out the conjunctival sac every fifteen or twenty minutes with a boric acid solution, applying boric acid ointment to the surface of the lids, and in using cold compresses for the first two or three days; not omitting, of course, the instillation of atropine as often as the condition of the pupil may demand.

A delay in transferring these patients to the care of an oculist is, of course, often unavoidable, but a special effort should be made in cases complicated by a prolapse of the iris requiring abscission and also where the perforating object is a bit of steel lodged in the interior of the eye and whose removal necessitates the use of a magnet.

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The superintendent of police has detailed a special squad of policemen for the suppression of unnecessary noises between midnight and 8 A.M. — *Jour. Am. Med. Asso.*

EXCISION OF THE OS INNOMINATUM. ARTHRODESIS OF THE SACRO-ILIAC SYNCHONDROSIS.*

BY CHARLES F. PAINTER, M.D., BOSTON.

The two cases which are here reported present certain unusual surgical problems, and the manner in which it seemed most feasible to handle them may be of interest. The first case represented at the time it was done the fifth instance of resection of the innominate for tuberculous disease of the ilium. Partial excisions have been quite frequently performed.[1] In the second case the literature has not been looked up, so the writer does not know how frequently this procedure has been practised. Attempts to reach this articulation without employing the plastic method used in this case have been made, but have not been attended with success.

Case I. R. F. D., thirty-six years, single, teamster. Nov. 16, 1902.

Diagnosis. — Tuberculosis of left greater trochanter.

Family history. — Negative, except that he had one sister who had Potts' disease, with extreme deformity.

Personal history. — Always well except for hip disease, beginning at the age of six, for which he was treated at the Children's Hospital. Denies venereal disease. Has been a very heavy drinker.

Present illness. — The present difficulties represent an exacerbation of an old tuberculous process in the left hip which has been quiescent for approximately thirty years. When he was six years of age he was treated at the Children's Hospital and was kept in the wards for six months. There was an abscess at that time which was operated upon. He used crutches for some time after this, but by the time he was eight years of age he was able to run about normally and has done the work of a laboring man after he attained his maturity, suffering no practical inconvenience from the old trouble about his hip except that occasionally there was some slight stiffness. He was not conscious of any restriction in motion. Three months before date of entering hospital, while walking in the country, he stooped to pick up some object and was seized by a sudden, sharp pain in the left groin. He was able to go home with considerable difficulty, where he remained confined to the house for seven weeks, during which time he was treated for "rheumatism." After he was able to get out he visited the Boston City Hospital, where an x-ray of the hip was taken, which showed a tuberculous focus in the great trochanter. He was referred from there to the Carney Hospital, which he entered on above date.

On physical examination he was well developed and nourished; color was good. Heart, lungs and abdomen were negative. Urinary examination was negative. On inspection the left thigh to all appearances was like the right except for a scar over the outer and posterior aspect of the greater trochanter. Normal motion in flexion. Abduction was possible to 25°, and the trochanter was on Nélaton's line. Complete extention was possible. Rotation was somewhat limited. Motions of right hip were entirely normal. There was .4 cm. shortening of left leg, .4 cm. of shortening measured from the umbilicus. The right thigh was 1.1 cm. larger than the left. The right calf was .6 cm. larger than the left. A second x-ray confirmed the report made upon the first which was taken at the City Hospital. On Nov. 19, 1902, under ether anesthesia, an incision was made over the greater trochanter, and the medullary cavity was trephined with an osteotome. A good-sized focus was developed in the center of the trochanter, extending a little way up into the neck of the femur and containing a considerable amount of caseous, semi-purulent material. This could be quite thoroughly scraped out down to a fairly hard osseous surface. The joint was not opened. After this operation union was by second intention, as a wick was kept in for some little time, but by the end of six weeks the wound was entirely healed and apparently solidly.

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* From the Orthopedic Clinic of the Carney Hospital.

[1] Bardenheuer: Verhandl. d. Deutsch. Gesell. für Chir., Berlin, 1906, xxxv, 187–190.

Nothing more was heard from this patient until March, 1904, when he returned to the clinic reporting that he had been quite well for nearly a year after his operation, but after the lapse of that time there had been a recurrence of the symptoms in his hip, and he was admitted to the Long Island Hospital, where the head of the femur had been excised. The general condition was not as good as when last seen. He had only a very few degrees of motion at the hip joint. The leg was considerably shorter, markedly atrophied, and there was a moderate amount of discharge from two sinuses at the seat of the last operation. The foot was markedly everted and there was considerable muscular spasm when attempts were made at motion. He was treated for some time as an out-patient and got along fairly well. He disappeared, however, from observation, and was not seen again until Oct. 23, 1905, at which time he had many sinuses, practically no motion at the hip joint and 20° of permanent adduction. He was referred to the Long Island Hospital again, but was finally settled in the Tewksbury almshouse for the winter. He remained there until the latter part of March, 1906, when he returned to the Carney Hospital in fairly good physical condition, with quite profuse discharge from a number of sinuses about the hip on the outer and anterior aspect of the thigh and in the region of the buttock. The tissue was very much indurated, both throughout the upper third of the thigh, the buttock, and also on the pelvic side of the left innominate. He was running a hectic temperature. There were no signs of pulmonary disease, and his kidneys, though excreting slight traces of albumin, were functioning satisfactorily. He was a state or city charge, was very much discouraged at his condition and was anxious to undertake anything that had any prospect of relieving from the annoyance of dressing his wounds, even though he were otherwise more incapacitated than he then was. He was taken into the hospital the latter part of April, 1906, and after keeping him quiet in bed for a week, dressing his sinuses carefully, and trying to build him up as much as possible, an attempt was made to eradicate the disease by an excision of the left innominate.

Operation April, 1906.

A long semilunar incision was made, beginning close to the posterior superior spine and following the curve of the ilium forward for a distance of about 18 cm. The attachments of the muscles about the crest of the ilium and the periosteum were dissected back separately, the absence of the head of the femur in some sense facilitating this procedure, though the presence of the inflammatory tissue about the seat of the old operation rendered it a more or less difficult procedure. The real difficulty of the operation was attendant upon attempts to strip back the periosteum from the pelvic side of the innominate and free this portion of the bone from the inflammatory exudate which was between the iliac vessels and the pelvic surface of the innominate. This, however, was successfully accomplished and the ramus of the pubis disarticulated at the symphysis, and after having retracted the vessels and nerves in the region of the greater sciatic notch, the posterior attachment of the innominate to the sacrum was divided and the entire bone removed, leaving behind a considerable part of the periosteum. The hemorrhage from the operation was considerable, though not from any large vessels, but from small muscular branches, and this was doubtless aggravated by the pre-existing inflammatory condition. The skin and muscles were closed over the extensively denuded area, after having removed a portion of the shaft of the femur which was carious and projected into the center of the operative field. Several wicks were left to drain this region. A large aseptic dressing was applied and the patient was returned to bed. The operation had occupied about one and one-half hours, and he had suffered very much from shock. He rallied from the immediate effects of the operation slowly, but showed no capacity for continued improvement, and in spite of judicious stimulation and careful nursing, he survived the operation only four and one-half days.

The specimen when removed showed considerable disease about the acetabular cavity, but it had not extended far into the body of the ilium or along the ramus of the pubis or ischium.

Case II. Mr. T. C., September, 1907. Age, thirty-three years. Married. Teamster.

Diagnosis. — Sacro-iliac dislocation. Arthrodesis.

Patient had been troubled with pain in the lower part of his back and down his left leg, dating from May, 1907. Of late it has become so severe as to incapacitate him from his work. He had been treated in one of the medical clinics for rheumatism, and his occupation, that of the driver of a brewery wagon, necessitates much heavy lifting and violent muscular exercise. In addition to this as a recreation he has been the anchor on a tug-of-war team. He has noticed that when engaged in this exercise he has suffered much pain, and also when lifting heavy beer barrels he has often experienced a sharp "catch" in his lower back, making it impossible for him to stand erect for some time.

On physical examination there was a moderate list of his trunk toward the right. Flexion and hyperextension of his lumbar spine were decidedly limited, and lateral motion toward the left was much more restricted than toward the right and was accompanied by a considerable amount of discomfort, which was localized in the left sacro-iliac synchondrosis. He walks with a decided guarding of his spine. There was no tenderness over the sacro-iliac joint. Palpation of his abdomen was negative. There was a marked Kernig's sign on the left. An x-ray was taken, but was practically negative.

The back was strapped and the patient experienced a moderate amount of relief.

Oct. 9, 1907. Since the last visit the patient has had a good deal of discomfort, which has only been moderately relieved by the application of adhesive plaster strapping. More complete fixation was secured by the employment of a plaster jacket, but even with this the relief was not satisfactory. He was then put up in a plaster spica with jacket attached. In this he was unable to get about much, but on account of his size and activity it was impossible to keep a satisfactory spica on him. He was therefore recommended to the House, which he entered Oct. 14, 1907. He remained in the hospital from Oct. 14 to Oct. 26, keeping quiet in bed with a jacket and spica made of plaster of Paris. This gave him only partial relief. He went home wearing adhesive plaster strapping and was readmitted Nov. 5 on account of the persistence of his pain. At that time an ether manipulation was undertaken, the patient after anesthetization being placed upon a hard table face downward. The left thigh was then forcibly hyperextended and continuous pressure was made over the left side of the sacrum. There was a loud snapping sound noticed while this manipulation was going on, which was accepted as evidence, though there was no other to substantiate it, of the replacement of the sacrum in a proper relation with the ilium. An adhesive plaster strapping with a felt pad was applied, and the patient was kept in bed until Nov. 20. The pain was wholly relieved by the manipulation. A tight webbing belt was then adjusted. He had very little pain and walked easily and with practically no list. He was discharged from the hospital at this time and returned to his occupation, which he was able to follow for nearly two months.

On the 31st of December, while at work, he suddenly began to have the former pain in his back. The list immediately returned as it had been before the manipulation, and on examination the Kernig sign, which had disappeared after the ether manipulation, had returned. There was present on Jan. 4, 1908, in addition to these symptoms which have been noted, a marked tenderness over the left sacro-iliac synchondrosis. Hyperextension as well as side bending and flexion were decidedly restricted. Recourse was had to bed treatment and fixation until Feb. 5, 1908, when the symptoms being unaltered, a second ether manipulation was undertaken, and the same manipulations were gone through, the same loud noise was heard when the sacrum slipped back into place and a firm adhesive plaster swathe was applied about the body and the patient returned to his bed. When he came out of ether, however, there was no relief to the discomfort from which he had been suffering previous to anesthetization.

Under date of Feb. 5 the record states that he had a great deal of pain, which was only with difficulty controlled with morphia.

Feb. 17 there had been no relief from his symptoms, and on getting out of bed the patient walked with the same list and felt no different than he did previous to the manipulations.

It seemed from this history that we had to deal with an actual dislocation of the sacrum upon the ilium, and on account of his musculature and large size (he weighed 220 lb.) it seemed unlikely that any apparatus could hold him, even supposing a third manipulative procedure should be successful in readjusting the relations of the innominate bone to the sacrum. Dissections were made in the Anatomical Department of the Tufts Medical School and a method of approaching the sacro-iliac joint was determined upon. The gluteal muscles were separated from their attachment to the crest of the ilium, reflecting them outward, and cutting off that portion of the posterior part of the crest of the ilium which terminates in the posterior superior spine. It was found that by making the osseous flap about 4 inches long on the crest of the ilium and carrying it down into the body of the ilium in a semilunar fashion to the extent of $2\frac{1}{4}$ to 3 inches at its deepest point, and bringing the incision in the bone out posteriorly at a point a little above the sacro-sciatic notch, it was possible to turn back this osseous flap and come down upon the auricular surface of the innominate.

Accordingly, on Feb. 18, 1908, the following operation was performed: A semilunar incision 15 cm. in length was made, beginning at the posterior superior spine and ending at the middle of the gluteal fold. The muscle fibers of the gluteus maximus were separated from the posterior portion of the iliac crest and reflected. A portion of the posterior part of the iliac crest, about 5 cm. in length and 4 cm. in depth, were cut out with the osteotome and turned up toward the sacrum without severing the superficial ligaments holding it to the sacrum. This afforded a view of the auricular portion of the articulation between the sacrum and ilium. These surfaces were scarified with the chisel and then the bone flap was turned back into place and retained with periosteally-placed catgut sutures. The muscles were reattached with catgut sutures and the skin closed with drainage. Dry dressing. No fixation.

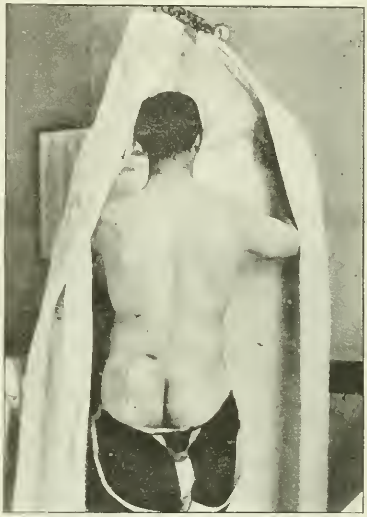

Fig. 1. Arthrodesis and sacro-iliac joint. Photograph taken eight weeks after operation. The scar of the operation is faintly shown. The dimple at the top represents the location of a wick used for a few days after operation. The skin scar was prolonged unnecessarily far down on the buttock. At the time this was taken there was no list of the trunk, and spinal emotions are equal on the two sides and nearly normal.

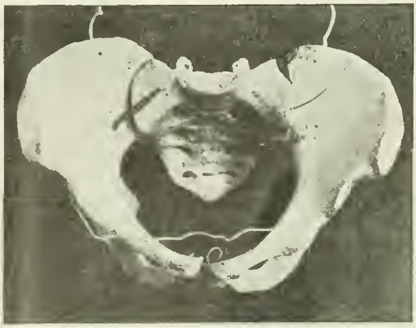

Fig. 2 shows the point at which the incision making the bone flap intersects the auricular surface of the sacro-iliac articulation.

Patient was kept quiet in bed until March 21, 1908, when he was allowed to be out of bed wearing a canvas belt, the wound having healed throughout its entire extent except for a slight sinus in the extreme upper corner where the wick had been inserted.

March 27, 1908. He was discharged from the hospital, being able to stand erect and having no greater restriction in his lateral motions in one direction than in another. Flexion and extension of the spine were about equally restricted. There was no list (Fig. 1) and the patient was complaining of practically no pain. His experience in the ward had taken off about 20 lb. from his customary weight.

April 24, 1908. Patient's wound has entirely healed. He has no discomfort in the back whatsoever, and only a slight amount of pain in the left popliteal space when he flexes the trunk without bending his legs. He can stand erect. Side bending is only slightly and equally restricted in both directions. Flexion is fairly normal. Is anxious to go to work, which he contemplates doing immediately. Fig. 1 illustrates the position assumed in standing and the location of the operation scar.

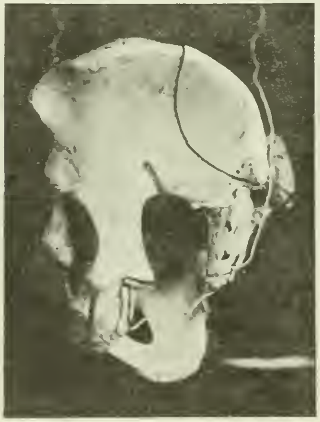

FIG. 3. This side view indicates the size of the bone flap which it is necessary to turn up in order to expose the articular surface between sacrum and ilium.

The result of this procedure has been, up to the present time, eminently satisfactory. It demonstrated the feasibility of attacking the sacro-iliac (Figs. 2 and 3) articular surfaces in a practical manner for the purpose of establishing an ankylosis between these bones, and in this particular instance the result which was sought for seems to have been accomplished.

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GENERAL THERAPEUTICS OF GASTRIC AFFECTIONS.*

BY MAURICE VEJUX TYRODE, M.D.,
Instructor of Pharmacology, Harvard Medical School, Boston.

DISEASES of the stomach are treated along the lines of general therapeutics which are applied to other organs. Two opposite principles lie at the bottom of symptomatic therapy, i. e., rest and exercise, or decrease and increase, of functions. When inflammation of certain skeletal muscles occurs, we usually immobilize them and thus afford rest. After the inflammation has subsided, we recommend graduated exercise to strengthen the parts. In the same way, in the disease diabetes, we at first rest the exhausted diseased cells by cutting out the carbohydrates from the diet, but when they have recovered at least a part of their vigor, we exercise them by giving increasing quantities of starchy material in order to develop their power of oxidation.

The stomach is also rested and exercised. Complete rest of the entire organ is impossible for any length of time, but a diminution of certain functions abnormally increased or the augmentation of those which are diminished is perfectly feasible.

The agents at our command include four general classes of, first, the physical, as exercise, massage, electricity, baths, etc.; second, the psychical, as suggestions in the hypnotic or hypnoidal states and under waking condition; third, the dietetic, including both qualitative and quantitative changes in the diet: and fourth, the medicinal.

In order that these agents may be judiciously and effectively employed, an accurate diagnosis must be made. This is so important in gastric affections because we frequently use exactly opposite treatment for two different conditions. As an illustration may be briefly mentioned the case of an editor who came under my observation some years ago. He had been treated in one of the hospitals for ulcer of the stomach by starvation and rectal feeding. After two weeks of this treatment he had lost 15 lb. and felt much worse than before. At this time he came to me, and on making the diagnosis of simple hyperacidity, fed him very copiously on a suitable diet, which resulted in a rapid and complete recovery from his attack.

Before taking up the treatment of the different gastric functions when at fault, let us briefly review the physiology of the stomach. This organ is not intended, as was formerly supposed, to make great digestive changes in the food or to absorb all the nutriments. Its absorptive powers are very restricted. Its digestive functions are mainly to disintegrate the food and prepare the latter for intestinal digestion. On account of the free hydrochloric acid, the gastric juice acts as an antiseptic towards the less resistant bacteria, as those of typhoid and cholera. The stomach, however, is not an indispensable organ, because both lower animals and men may thrive after its extirpation. Yet, when in the body, alterations in its functions may produce great annoyance.

Decrease in the motor activity of this organ gives rise to most distressing symptoms. It is important to know whether these result from weakness of the muscular walls due to general asthenia or to dilatation caused by overeating and overdrinking or whether it be from obstruction at the pylorus. When the closure is complete, surgical treatment is alone plausible, but when partial, the therapy is much the same as in dilatation due to weakness in the musculature. It consists in giving small but frequent meals of a non-fermentative character, with limited liquids; also stimulants to increase the tone of the muscles, as strychnin or nux vomica; and antiseptics, as resorcinol, naphthol, thymol, etc., to prevent decomposition if necessary. In case the stomach does not empty itself within twenty-four hours lavage may be practised every evening. Massage of the abdomen, also intragastric electrical stimulation, cold baths and general exercise outdoors, all help towards the improvement. If anemia is present, suitable means are to be employed to remedy this condition.

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* Read before the Attleboro Medical Club, May 12, 1908.

Increase in the motor function of the stomach occasionally occurs in nervous individuals and may give rise to gastric distress, also to a feeling of emptiness and faintness. This may be corrected by giving large meals containing slowly digestible foods and also depressants to smooth muscle fibers, as atropine and crude preparations of belladonna and hyoscyamus.

When only certain portions of the stomach, as the cardiac or pyloric end, suffer from increased motor activity or *spasm*, we try to correct the cause, which is at times general nervous excitement and hyperacidity. For the former, we recommend bromides, with suitable hygienic measures, and for the latter its respective treatment.

Sensory disturbances comprise pain, sensitiveness, pressure, fullness, belching, nausea and vomiting, vertigo and headache. *Pain* may be present from ulcerations, new growths, distension, hypersensitiveness or the presence of irritant products, as an excess of hydrochloric acid. That due to ulcer, irritation and hypersensitiveness is controlled by avoiding irritating articles of diet and by applying curative measures for the condition causing it. Local anesthetics, such as soda water, orthoform and anesthesin, may be of value in the different ailments. Drugs which depress reflexes as bromides are also of service, but in cancer stronger narcotics as morphine become necessary. *Belching*, which is very troublesome, is in many cases not due to actual large amounts of air and gas present in the stomach, but is only a reflex resulting from irritation of the organ.

In cases of dilatation with fermentative processes, when belching is due to the presence of gas, the treatment consists in the use of the antiseptics and stomach washing. When it is a nervous reflex, the treatment of the underlying irritation and toning of the system with use of quieting drugs usually abolishes it. *Nausea* and vomiting may occur either from the presence of irritation of the mucous membrane, general fatigue or neurotic suggestions. Local gastric reflex requires attention to the existing cause, as the emptying of the organ when filled with irritating material. On the other hand, the nausea due to asthenia and neurotic conditions is best treated by tonics, hygienic methods and mental suggestions.

To illustrate the *effectiveness of suggestion* in suitable cases, the following may be mentioned: A young married woman, very fleshy and strong, had come to this city quite suddenly from Canada to attend the burial of a brother dead under rather tragic circumstances. Three days after the funeral she started to have a nauseated feeling, then vomited for thirty-five days without remission every article of diet taken into the stomach and lost 50 lb. in weight. The attending physicians had variously diagnosed the case as obstruction, ulcer or cancer. When called on the thirty-fifth day, I could not convince myself that there was any organic basis for the trouble. Acting on this diagnosis, I gave her suggestions in the waking state and had a large meal of chops, potatoes, etc., served to her. She ate it and never vomited again to this day (eighteen months).

Among the very troublesome gastric disorders are those due to changes in the *secretory functions.* Decrease of the gastric juice and hydrochloric acid often occurs in cancer, gastric catarrh and also in some nervous conditions. If this decrease is combined with motor insufficiency, the undigested food ferments in the stomach and gives rise to much distress. Such articles of diet as meats, meat extracts and strong odorous foods sometimes craved by patients stimulate gastric secretion. Improvement of the general physical condition is of great importance. As local stimulant drugs, the most effective are hydrochloric acid in large doses, besides nux vomica and the simple bitters.

More frequently we find an *increase in the hydrochloric acid* and gastric juice, attended by most disagreeable symptoms and a melancholic frame of mind, which in itself aggravates the condition. On giving the patient the assurance that his disease is not serious, increasing the exercise, making the diet chiefly of fats and proteids, with lunches between meals, quieting the irritability with bromides, keeping the bowels free, decreasing the formation of acid by members of the atropine group and correcting excesses with alkalies, often immediate improvement may be observed.

Great care, however, should be exercised in not confounding grave troubles, as ulcer and cancer, with hyperacidity, as cases have come to my observation with carcinoma when the diagnosis of the attending physician was nervous dyspepsia.

As this talk is only on the general principles of gastric therapeutics and not on its detailed special therapy, only a few words will be said concerning cancer and ulcer.

To the physician, the most important factor is the making of an early diagnosis, of neglecting none of the newer methods at our command for detecting an incipient, malignant growth. As it is impracticable to open the abdomen in every case of gastric disorder, the important work and the credit for cures of gastric cancers will rest with the medical man who diagnoses his cases early enough for radical operation, when they have come to him in time.

Ulcers require a very strict observance of dietetic rule. At the beginning, a complete rest from irritation obtained by rectal feeding gives the best opportunity for rapid healing. During this period alkalies may be employed to neutralize the hydrochloric acid and prevent its corroding action while the ulcer heals. When the healing process has begun, bismuth subnitrate given in large doses acts as a protective astringent and often gives excellent results. When food is again allowed by the mouth, it should be of a non-irritative character, finely comminuted, also containing much fat, as cream, butter and milk, which will sooth the irritation and prevent the corroding effect of the acid. All spiced or acid articles and meat extracts are to be carefully avoided, as they irritate and increase the acid secretion.

EXAMINATION OF ONE HUNDRED EYE CASES IN THE DEDHAM PUBLIC SCHOOLS.

BY RALPH WALDO PLACE, M.D.,
Former Senior Surgeon, Eye Department, Boston Dispensary, Boston.

Many parents refusing to have their children's eyes examined and glasses properly fitted when necessary, the School Committee of Dedham, Mass., decided to take the matter in hand.

Notwithstanding the fact that teachers had tested the vision in these cases, as required by law, and found it far from normal, that several were cross-eyed and that notices had been sent to the parents, nothing had been done for them, although many were from eight to twelve years of age.

Some parents were unable to buy glasses, others seemed indifferent whether their children had them or not, one even telling her little girl she could go blind before she would get them for her. The use of lenses by young children is comparatively a new thing, and many are prejudiced against it.

The children were examined by me in each schoolhouse, a darkened room being found in the basement. Homatropine was used in all hypermetropic cases, and an examination with the retinoscope and ophthalmoscope given to all. Careful notes were made in each case. Only those having considerable refractive error were fitted to glasses. Many of these had large amounts of simple and compound hypermetropic astigmatism. Eyes of this kind should have glasses for constant use as early as possible, so they may not become hopelessly amblyopic. A few had high myopia which needed correction to stop its progress.

Three far-sighted children had been fitted to near-sighted glasses by opticians. Of course these only aggravated their trouble.

One cannot help being impressed by the valuable work teachers are doing in testing the acuity of vision. In the large majority of instances they are able to detect subnormal sight; but some must be tested by an oculist in order to discover latent errors. Young children with two, three and even four diopters of far-sight can sometimes read the usual amount at a distance, and these must be watched for inability to read their books for any length of time without having the vision blur or eyes ache. These patients especially have nervous symptoms greatly relieved by wearing glasses.

The School Committee made an appropriation for the oculist. Measurements for the frames were taken at the time of testing and the glasses delivered through the headmaster in each school, he collecting the money for them. Those unable to pay were given glasses and the committee paid, the money being contributed by charitably disposed Dedham people. As a large number of glasses were furnished at one time, they were obtained at a special rate.

I report this work because I have never known of its being done in this way before in the public schools, and because I feel how very important it is to the growing child. It seems to me this is the only practical way they can be reached, and they certainly should have attention without delay in all communities. If children with defective vision are neglected, they will never be able to see well when older, and many eyes will be ruined.

It goes without saying that the examination should be made by an eye specialist who is a physician, otherwise inflammations of the eye will be overlooked and questions as to whether glasses are needed will be decided incorrectly.

SUMMARY.

Number examined,	113
Number wearing properly fitted glasses,	21
Number wearing glasses which failed to correct defects,	16
Number recommended to wear glasses,	47
Number not needing glasses,	29

Clinical Department.

THYMIC OPOTHERAPY.*

BY REYNOLD WEBB WILCOX, M.D., LL.D., NEW YORK,
Professor of Medicine at the New York Post-Graduate School and Hospital; Physician to St. Mark's Hospital.

It is unnecessary to present an elaborate study of the anatomy or of the physiology of the thymus gland. It suffices to know that its greatest activity and functional energy in growth is soon after birth, and that both of these, although lessened, yet keep in proportion to the rest of the body, so that its increase is continuous until puberty is attained. (Friedleben.) For some years afterwards it may remain stationary in size, but in well-nourished individuals it gradually undergoes fatty metamorphosis. Physiologically, its ample blood supply, particularly in infancy, is remarkable, and it contains a large quantity of nuclein and is consequently rich in phosphorus, which exists in the form of nucleinic acid.

We may define nuclein as that constituent of the cell by virtue of which the histologic unit grows, develops and reproduces itself, utilizing the pabulum within reach. In other words, nuclein not only stimulates cell growth, but indirectly assists general growth: (*a*) by the phosphorus content aiding bone production, and (*b*) by nucleinic acid, which, by producing hyperleucocytosis, increases the resisting power of tissue liable to infection. (Myake, v. Mikulicz, Renner, Pankow.)

The purpose of the thymus gland may be fairly assigned as directed toward the attainment of adult growth by the individual. The importance of this statement with reference to opotherapy is shown by the following report:

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* Read before the American Therapeutic Society at the ninth annual meeting at Philadelphia, May 8, 1908.

On Dec. 28, 1904, Dr. Irving L. Hamant, of Norfolk, Conn., was asked to examine a boy whose history was that of not having increased in weight nor stature for about three years. During this period he had been under the care of a physician and of two professors of medicine, one of diseases of children, and a physician of reputation had seen him in consultation. The patient had had a very good appetite, had slept well, and had had no illness beyond an occasional sick headache. He felt well, but did not have quite the amount of endurance usual to a boy of his age and apparent health. His parents are both of average height, and somewhat more than average in weight. He was an apt scholar, taking naturally to books and learning difficult lessons without effort. He had a good memory, and a bright, active mind. Physically, he was undersized and deficient in strength. His age was fourteen; weight, 81 lb.; 4 feet and 10 inches in height. This, and all subsequent measurements and weights, were taken at the same time of day, about 5 P.M. He was slightly anemic, but moderately well nourished. A blood test showed hemoglobin to be 70%. His muscles were thin, but what there was of them was quite firm; otherwise, the boy was in normal condition. Treatment was instituted with the end in view of toning up blood quality and nervous force, hoping thereby to increase assimilation and growth.

On Feb. 15, 1905, no apparent gain having been made, he was referred to me. The history, as given above, was confirmed, and a careful examination furnished no additional information. His urine, on examination, gave the following data: Specific gravity, 1020; acid; amber; normal odor; clear, with moderate red crystalline sediment; albumin, sugar and bile absent; distinct trace of indican; urobilin normal. Urea, 1.35%; uric acid, 0.0176%. Chlorides and phosphates normal. A very few hyaline casts were present in a centrifuged specimen, but no red blood corpuscles, leucocytes, pus cells, spermatozoa, bacteria nor urates. A small amount of mucus was found, and many uric acid crystals.

The function of the thymus gland was stated; the hypothesis that in this instance it was prematurely atrophied presented, and the suggestion that the administration of thymus extract might be therapeutically useful, advanced. It was explained to the father, a remarkably intelligent and well-educated man, that according to Kohlrausch's method of least squares, the probability of success was as 1 is to 9! As nothing which had been hitherto advanced had promised even a shadowy basis, and results had been even less tangible, consent was given, and Dr. Hamant at once began treatment, the results of which are recorded in his words: "He was, therefore, put upon the following: Thymus extract, 2 gr., night and morning, to stimulate nutrition; cod liver oil emulsion, half an ounce ofter meals, to nourish and fatten; oil of theobroma by inunction at night to stimulate intestinal peristalsis. This treatment was continued for several months, except the inunctions were dropped sooner. The cod liver oil then became distasteful, and other tonics were given, but finally all regular remedies were stopped except the thymus. This was administered regularly for more than a year. By the end of June the boy measured 4 feet 11 inches; on Dec. 8, 1905, 5 feet 1¼ inches. On March 12, 1906, which was about a year since beginning treatment, he measured 5 feet 2 inches, a growth of 4 inches. This, remember, in one who had previously stood still for three years. By July 2, 1906, he had gone up to 5 feet 3¼ inches. About June 20 his supply of thymus ran out, and it being vacation time and he tired of continual dosing, he was allowed to stop the remedy for seven weeks. On Aug. 21, 1906, he was again measured, and the mark was not the one twentieth of an inch above that of July 2. Thymus was again begun, and on Sept. 30 he was found up to 5 feet 3¾ inches, a gain of nearly half an inch in five weeks. His weight at this date amounted to 101½ lb. The subsequent record is as follows:

Dec. 21, 1906,	5	feet	4⅞	inches.
Feb. 19, 1907,	5	,,	5½	,,
June 7, 1907,	5	,,	6	,,
July 6, 1907,	5	,,	6⅛	,,
Aug. 14, 1907,	5	,,	6⅜	,,
Sept. 28, 1907,	5	,,	6¾	,,
Oct. 30, 1907,	5	,,	6¾	,,
Jan. 18, 1908,	5	,,	7	,,
Feb. 10, 1908,	5	,,	7¼	,,

"Between Sept. 28 and Oct. 30, 1907, no thymus was given. On Feb. 10, 1908, his weight was 124 lb."

You will note that in the three years which have elapsed since the thymic opotherapy has been carried, there has been a gain in height from 4 feet 10 inches to 5 feet 7¼ inches, namely, 9¼ inches. During this period his weight has increased from 81 to 124 lb., a gain of 43 lb. It is also noteworthy that during the cessation of treatment for seven weeks in 1906 and for five weeks in 1907 there was absolutely no gain in height.

It is not necessary at this time to pass in review the results of the administration of thymus for the relief of simple or exophthalmic goiter, infantile atrophy and marasmus and rickets, chlorosis, spasm of the glottis, splenic enlargement, vasomotor ataxia, tuberculosis, hemophilia, scurvy or nervous disturbances at the menopause and at puberty dependent upon excessive, perverted or premature thyroid secretion, for these require further confirmation. My purpose is merely to present a record of the results of thymic opotherapy in a field in which the literature is exceedingly meager, and for the opportunity, as well as for the painstaking record, we are all indebted to the courtesy of Dr. Hamant.

Reports of Societies.

AMERICAN PEDIATRIC SOCIETY.

DELAWARE WATER GAP, MAY 25–26, 1908.

The President, Charles Gilmore Kerley, M.D., New York, presided.

THE SERUM TREATMENT OF EPIDEMIC CEREBROSPINAL MENINGITIS.

(By invitation.) Simon Flexner, M.D., New York, said he owed his ability to bring before the society a large number of figures relating to cases treated with the serum to the fact that several of the members had been very active, indeed strenuous, in subjecting it to a clinical test. It had been about one year since the serum was first used in this country. He had statistics on something less than 400 cases, all diagnosed bacteriologically as well as clinically, in which the serum had been employed. In the last year the use of the serum had been somewhat modified, larger and more frequent doses being employed. A larger percentage of recoveries were shown than in previous series. Cases were treated much earlier now, which was a point of great value. The speaker emphasized this point and compared it with the early use of the diphtheria antitoxin. The serum belonged to the class of bacteriolytic sera rather than to the antitoxic class. It exerted a deleterious effect upon the micro-organisms; their viability was to a certain extent lost. It was not wholly devoid of antitoxic properties, but its chief value was in the destruction of the micro-organisms. The figures were based on 322 cases treated in this country and abroad, which he had analyzed. Of 247 in this country, 68 died and 179 recovered, a case mortality of 27%. That included not a few treated very late, and some treated early but in which the conditions were desperate, and some in which death occurred within twenty-four hours after the injection. Some underwent a marvelous change after one or two injections. There were 13 under one year of age, the youngest, four weeks; of these 5 died and 8 recovered, a case mortality of 37.5%. The child four weeks old recovered. There were 26 between one and two, the mortality of this series being precisely the same; 45 between two and five, of which the mortality was 22%; 62 between five and ten, of which the mortality was 11%; 57 between ten and twenty, of which the mortality was 28%, and finally 44 over twenty, of which the case mortality was 45%; 47 terminated by so-called crisis and 124 by so-called lysis. He emphasized that there occurred in these cases a sudden and prompt termination of the disease. Seventy-two of the 322 cases came from Great Britain, in which the mortality was 30%, the previous mortality, not treated with the serum, varying from 75% to 80%. He felt that as a therapeutic agent directed to such a serious disease it should not be adopted too soon, but should be given the most thorough test until such time as there could be no doubt, and it should be made by those who have observed the disease before the introduction of the serum and since. Certainly the disease was apparently modified in its intensity, and whether the mortality was greatly reduced or not that was of considerable importance.

THE DIAGNOSTIC VALUE OF THE CHEMICAL AND BACTERIOLOGICAL EXAMINATION OF CEREBROSPINAL FLUID.

Alfred Hand, Jr., M.D., Philadelphia, referred to the importance of the exact diagnosis of the disease, and said lumbar puncture furnished the means for such diagnosis. Interpretation of the fluid was sometimes easy and sometimes very difficult. If the fluid shows marked opalescence, which disappears as the fibrin forms, and the fibrinous network contains tubercle bacilli, diagnosis is positive. The diplococci may be found in the pus cells or in the fluid, but usually in the fluid. The fluid may be very slightly turbid so that it is difficult to recognize it. Examination should be made as soon after the fluid is obtained as possible, and loopfuls transferred to slide and stained immediately. Test tube containing the fluid may be allowed to stand several hours that the fibrin network may be formed, which is transferred to slide with needle, spread out and fixed by heat. Chemical examination of the fluid for albumin may be made at this time. Normal amount of albumin, about ½%. Half of the fluid may be used for the phenol-hydrazin test for sugar. Examination may then be made for the pneumococcus or meningococcus. Differential count of leucocytes of great value when it can be made.

HYDROCEPHALUS OF MENINGOCOCCUS ORIGIN, WITH REMARKS ON THE SERUM TREATMENT.

J. H. Mason Knox, Jr., M.D., and Frank J. Sladen, M.D., Baltimore, reviewed the literature of the subject and said their attention had been directed to the condition by 2 cases which occurred during the winter; first, child five months, seen only twice in consultation; baby had been normal at birth and for two months after and then had some gastro-intestinal indigestion; convulsions with vomiting followed; after two weeks symptoms seemed to abate, but retraction of the head was noticed and continued, becoming more more and marked. On inspection child was lying in typical posture; had large bulging fontanelle, all the sutures gaping from the pressure; circumference 44 cm. Lumbar puncture, small number of typical meningococci found. Child did well for few days, but a week later second puncture became necessary with practically the same results. Serum advised but refused by the family. Improvement after the second puncture, but a few weeks later the child died; no autopsy. Second case occured in child of six months; head slightly retracted; evident hydrocephalus with bulging fontanelles; no cause for the condition could be obtained; no fall; no acute illness; left side bulged more than right and skin rather red. Cerebral tumor had been first suspected. Puncture gave dry tap. Ventricular puncture gave 120 ccm. slightly turbid fluid, in which Dr. Sladen found a number of meningococci, intra- and extra-cellular. It was ascertained that four months previously the child had waked from sleep with a cry followed by convulsion and strabismus, and afterward size of the head had begun to increase; circumference 46.5 cm. Second lumbar puncture gave almost no fluid which was sterile. Improved somewhat, gained 250 gm. in fourteen days, then suddenly collapsed; Cheyne-Stokes breathing developed. No autopsy. The writers believed that the use of the serum would do much to prevent the development of this condition of hydrocephalus. They reported 2 cases treated with the serum; one a boy of fifteen, with very severe infection, ill ten days when first seen; meningococci in the fluid; improved markedly in three days; developed otitis media, and paracentesis of both tympanic membranes done; hearing impaired but better when he left hospital. Second case, child of seven, seen early in the disease; received but two doses; after the first symptoms markedly improved and after the second uninterrupted convalescence. Dr. Sladen had gone carefully over the cases of meningitis before the use of the serum and found of 33 cases, 21 died and 12 recovered; lowest mortality in any one year 43%. In the last 4½ months 21 cases admitted; all treated by puncture lumbar and injections of serum; of these 3 died and 18 recovered; mortality of 14%; the 3 fatal cases were of unusually virulent type.

THE SERUM TREATMENT OF CEREBROSPINAL MENINGITIS, WITH REPORT OF CASES.

Charles Hunter Dunn, M.D., Boston. The report was based on a series of 40 consecutive cases treated with the anti-meningitis serum, all cases in which the diplococcus was found in the cerebrospinal fluid; 16 cases occurred in the Children's Hospital, 8 in various others and 16 in private practice, the serum administered in all cases by injection into the cerebrospinal canal. Lumbar puncture was performed and the serum injected at once without waiting for the investigation of the fluid bacteriologically. In some cases where other organisms were found one injection had been given but no harm attended its administration. There was no case in which improvement did not follow first injection, which was repeated until four successive doses had been given. Routine dose was 30 ccm., maximum 45. Of these cases, 9 died and 31 recovered, a mortality of 22.5% and recovery of 77.5%. Of the 31 that recovered, 2 were left with sequelæ, 1 deaf and 1 both blind and deaf. Twenty-nine now perfectly well. There were 3 cases of the fulminating type with 1 death; 6 of very severe type with 2 deaths; 19 of the common type with 1 death; 6 decidedly mild cases with no deaths; 6 late cases, all unconscious when seen, with 5 deaths. Compared with other years: Up to 1903 treatment largely symptomatic; in that year repeated lumbar puncture largely employed; in 1906 cases treated with diphtheria antitoxin, and in 1907 cases treated with vaccine prepared from the diplococcus. This year the mortality had been 19%, a tremendous drop, and the shortening of the course of the disease compared with its duration under other forms of treatment had been very striking. There had been immediate marked improvement in 18 cases. Results depended mostly on how early the serum was used. Mortality where given in first week only 8%, whereas where given in second week mortality was much higher.

THE SERUM TREATMENT OF EPIDEMIC CEREBROSPINAL MENINGITIS (TEN CASES).

F. S. Churchill, M.D., Chicago, reported 11 cases in all. Of these 4 died. Two were unproved cases; the other 2 meningococcic; one a girl of sixteen admitted to hospital the tenth day practically moribund; the other a man of twenty-five, who died on the fifth day of the disease, the serum having no effect whatever. The other 7 cases were recoveries. The cases were studied as to the general condition, the effect of the serum on the condition and the number of leucocytes and bacteria. First, boy of fourteen; came in on sixth day of disease; puncture done on that day with no effect upon temperature; next day serum given with decided drop in temperature, followed by cessation of the disease by lysis. Dose 32 cm. Second, boy of sixteen; came in twenty-second day of disease with temperature of 106.5; puncture done followed by drop in temperature, but immediate rise; 3 successive doses of 30 ccm. given with decided drop and failure to rise. Third, little girl of nine; very severe case; puncture on first day; drop in temperature; serum given on third and fourth days; downward course continued in very decided way. Fourth, nine-year-old boy; in the hospital on twenty-first day of the disease; rather severe protracted case; serum given every other day, 15 ccm. doses; temperature did not fall until thirtieth day. Complete recovery. Fifth, woman; lumbar puncture twenty-first day of the disease accompanied by drop and subsequent rise. After fifth day 30 ccm. given with drop and no subsequent rise. Sixth, nineteen-year-old Greek; very severe case; came in first day of illness and serum given on second and fourth days; each time 30 ccm., followed by fall and subsequent rise, but not so high; continued to fall with corresponding steady fall in leucocyte curve. Seventh, eleven-year-old child; exceedingly severe case; successive doses of serum, 30 ccm., with gradual fall of temperature. The decidedly marked improvement that followed the use of the serum was striking. It at once lessens the suffering and it seemed strange to go into the wards and find the patients though with head drawn back and the whole body in a rigid condition yet smiling and talking and interested in their surroundings.

OTHER METHODS OF TREATMENT COMPARED TO THE SERUM TREATMENT OF CEREBROSPINAL MENINGITIS, WITH A RESUME OF BOTH METHODS OF TREATMENT.

Henry Koplik, M.D., New York, said it was often apparent in considering the methods of therapy in any disease that we sometimes lose sight, in the presence of some favorable results, of the nature of the affection, and in no disease was this more common than in cerebrospinal meningitis. As had been pointed out by Osler, this disease closely resembles in its behavior pneumonia. It occurs sporadically and epidemically. In the sporadic cases we rarely meet with the severe forms. It had to be admitted that on the whole the symptomatology of the sporadic and epidemic forms were alike, but the sporadic form runs a much milder course than the epidemic form. In the sporadic form it rarely reveals purulent fluid at the onset. Taking up the sporadic forms the writer had been fortunate enough to have the records of cases treated since 1899 up to the epidemic years of 1904–5. They first began the symptomatic treatment in 1899. This consisted in careful study of the symptoms and lumbar puncture repeated as often as symptoms warranted it. During 1899 and 1900 had 8 cases of meningococcic type; during 1901–2–3, 13 cases, thus making 21 sporadic cases. Of these 8 died, a mortality of 38%. Of these 8, 6 were below one year of age. There were 2 recoveries in those below one year, and 2 between the ages of one and two. In the epidemics of 1904–5, the history of the disease was a more virulent one; some died a few hours after admission. In the first epidemic year there were 39 cases and 21 deaths, a total mortality of 53%. Of these 21 deaths 13 were below thirteen years of age; 26 above the age of two. Of these 9 died, a mortality of 34%. In 1905 there were 35 cases, of which 17 died, a total mortality of 48%. Of the 17 deaths, 10 were below two years of age. The mortality was practically 100% in those under one year of age. Thus in the two epidemic years there were 51 cases above two years of age, with a mortality of 31%. There were 23 cases in these two years below two years of age, of which 78% died outright.

From a study of these two sets of statistics, one of the sporadic and the other the epidemic form, in the sporadic cases they succeeded in saving by simple lumbar puncture four children below two years, whereas in the epidemic form they succeeded in saving none. The writer did not believe in puncturing any case unless there was distinct indication for it. To be punctured the patient must have symptoms of pressure. The serum was introduced not by a syringe, but by a funnel, and an attempt made to introduce the same amount of fluid that was drawn off. In the 13 cases treated with the serum the ages varied from three and a half to five and a half years; 3 were below one year. Of those below one year 1 was discharged at ten months. Those over two years recovered. In the children below one year that died, the youngest, three and one-half months, had been ill two weeks on admission.

DISCUSSION.

Under general discussion of these papers, L. Emmett Holt, New York, said statistics were collected of 2,350 cases in the epidemic of 1904 in New York, of which the mortality, all non-serum treated, was 75%, and of 350 cases in which the duration of the disease was known, 50% lasted five weeks or longer. This was very striking in comparison with the cases reported at this meeting. During epidemic years they treated 83 cases and lost every case under one year of age. He considered the showing very encouraging.

Thomas Morgan Rotch, M.D., Boston, was loath to to speak of epidemic and sporadic cases; the organism ruled the disease; it did not differ in any essential way. They had shown in their wards that the injections do no harm and he considered this a very important point, as there was no time to wait; the injections should be given at once. He believed that sometimes life might be saved by injecting twice in the twenty-four hours. If the treatment were pushed many of the distressing sequelæ might be avoided.

Frank J. Sladen, Baltimore, said that in 21 cases in Dr. Barker's clinic the effect had been just about as described by Dr. Churchill and Dr. Dunn,— a rapid drop in temperature within twenty-four hours. There was increase in polymorphonuclear leucocytes after one injection. Extracellular organisms found in the first specimens were intracellular in subsequent ones. The bacteria were destroyed, lost their staining characteristics and viability, suggesting a bacteriolytic property. The rapidity with which the symptoms disappeared also suggested an antitoxic property.

A. Jacobi, M.D., New York, thought that where subnormal temperature was noted it was due to a complication not yet understood and might be treated with something in addition to the serum, as alcohol was used in the treatment of diphtheria sometimes where the antitoxin did not benefit. He considered the results shown very encouraging.

John Lovett Morse, M.D., Boston, said that when we find the organisms in the cells and outside the cells and get a culture, and then the next day after giving the serum found no organisms outside the cells and a diminished number within the cells and no cultures, there could be no doubt. As to the indication for lumbar puncture, he thought it should be done on suspicion of the disease; we should not wait for signs of increased pressure. He thought the serum should be used early and often, at least once a day and sometimes oftener.

Rowland G. Freeman, M.D., New York, emphasized the fact that the serum was valuable in very late cases.

W. W. Wilkinson, M.D., Washington, said that of 10 cases treated at the Garfield Hospital there were 7 recoveries and three deaths, and of the 3 cases that died 1 had chronic hydrocephalus on admission, one was not given large enough doses at first and the other was in a comatose condition when treatment was begun.

Samuel S. Adams, M.D., Washington, emphasized the fact that by this treatment the distressing sequelæ of the disease were lessened. He had had one case in a child of seven months in which the pressure was so great that it burst through the fontanelle; improved markedly after the first injection. In a boy thirteen with most intense symptoms, opisthotonos and convulsions, there was complete recovery. He thought the treatment offered better results than any other method of the past three decades.

Charles G. Kerley, M.D., New York, said that there had been brought before the society at this meeting a method of treatment, alleviation and cure, of a disease which had heretofore been looked upon with little or no hope, and he trusted that these good results would be continued.

CONGENITAL OBLITERATION OF THE ESOPHAGUS WITH THE REPORT OF A CASE.

J. P. Crozer Griffith, M.D., and R. L. Lavenson, M.D., Philadelphia, had endeavored to make the report one for reference, and necessarily, they said, referred largely to the writings of others, adding such cases as they had collected. The case reported was one of obstruction with fistula into the trachea; child of nine days, admitted to the Hospital of the University of Pennsylvania; had been unable to swallow since birth, and every attempt to give anything produced strangulation with cyanosis and regurgitation through the mouth. Child was greatly emaciated and died a few hours after admission. Drawing of the condition was shown. Upper part of esophagus ends blindly; lower part opens into trachea. Symptoms were characteristic. Constant choking over mucous that could not be swallowed. Death invariably occurs, due partially to drying up of the tissues from lack of water. Only possible thing to do is a gastrostomy, which has been tried in several cases.

SPASMODIC STRICTURE OF THE ESOPHAGUS IN AN INFANT AGED FOUR MONTHS.

Samuel S. Adams, M.D., Washington, presented the history of infant who came under observation at age of four months, last February a year ago. Was called in to see child with history of having some difficulty in swallowing. Baby well nourished. Had nursed mother up to third month, when modified milk had to be substituted. Child could swallow at times and then something would take place that prevented swallowing and it would go some days without food. On giving a few spoonsful of water, which was taken ravenously, distress was shown and attempts at vomiting. Fluid would come up into mouth and be swallowed again. After eight or ten attempts it was rejected together with mucous. Obstruction of esophagus diagnosed, of a spasmodic nature. Attempts to pass bougie failed, but succeeded in passing small sound and following it up with small feeding tube. Skiagraph showed nothing. Parents removed child from hospital and for next fourteen months child was not seen, but the condition said to have persisted. Later the child died of pneumonia, autopsy showing a pneumonia of posterior left side and rupture of a diverticulum. There was an obstruction of the esophagus due to breaking down of tuberculous gland, which was enlarged and pressed upon the esophagus. Below the obstruction there were two diverticuli; a third diverticulum was above the obstruction.

Dr. Augustus Caille, New York, in discussion, reported a somewhat similar case in a lad of ten, who had had a spasmodic stricture for five years. It came on gradually and the boy was moribund from starvation. Once or twice a week the tube has to be used to feed him. Lad had had hydrocephalus in infancy and the speaker thought the irritation was probably of central origin. He warned regarding the examination of the esophagus by means of sound or esophagoscope as he had recently seen a girl of sixteen, with difficulty in swallowing, examined with esophagoscope by expert, who ran the instrument into pleural cavity, followed by development of pneumothorax and death.

Dr. C. B. Putnam, Boston, mentioned a case like Dr. Griffiths' occurring in child three years old. Esophagus had a blind ending and lower portion opened into trachea.

Dr. Thomas Morgan Rotch, Boston, said some of these cases of constriction of the esophagus simulated very closely pyloric stenosis; were almost identical as to rational signs. There was danger in passing sound because there seemed to be a thinning of the wall at lower part of esophagus in these cases. They also simulated closely cases of chronic gastric indigestion.

Dr. A. Jacobi, New York, said carcinoma of the esophagus is apt to be found in the same position. He thought the cause must be looked for in embryonal conditions. Defects of the muscular layers were quite common.

Dr. Samuel S. Adams, Washington, said in closing that there was no fluid found outside of the esophagus in the surrounding tissue, nor was there anything in the bronchial tubes, but he believed the pneumonia was probably the result of inspiration of some food the child had been trying to take.

EXHIBITION OF A HEART WITH CONGENITAL DEFECT OF THE VENTRICULAR SEPTUM AND ABSENCE OF THE PULMONARY ARTERY; SYMPTOMS OF ANGINA PECTORIS.

D. Alfred Hand, Jr., M.D., Philadelpha, exhibited this specimen. Patient was colored boy three years old, admitted tenth of last July to the Children's Hospital with the history of having had attacks of dyspnea. Had never had any of the diseases of childhood, but had been "blue baby." The first attack of this condition had been in April, 1907; one in April, one in May, two in June. Nothing like an aura noticed. Seemed to have pain in the attack. Slept after the attack was over.

During attack heart action rapid and obscured by lung sounds. Pupils dilated. Attacks lasted one hour. There were symptoms of angina pectoris. Post-mortem showed hypostatic congestion of lungs. Heart: length, 9½; width, 7½; weight, 115; absence of pulmonary artery infarcts in spleen and kidney. These anomalies of heart with defective septum allow longer life. Complete obliteration is rare. Stenosis occurring early in fetal life prevents partition of the heart.

Dr. A. Jacobi, New York, believed that these cases are not so very rare and that most of them are, as the writer says, diagnosticable. The circulation remains fetal, as it were, and, the two ventricles remain alike.

A SIMPLE METHOD OF CIRCUMCISION IN THE NEW-BORN.

W. Reynolds Wilson, M.D., Philadelphia, said the disadvantages of the usual method were (1), in the incompleteness of removal of the foreskin in instances where it is adherent to the glans; (2), in the application of the sutures; it may require a number of sutures to control the bleeding points, and the sutures thus placed irregularly may have to be tightened to the point of unduly constricting the tissues, as a result of which edema occurs; should sutures become infected, slough formed and resulting granulations were difficult to deal with. The writer splits the prepuce longitudinally on the dorsal aspect with a pair of sharp scissors. The skin is first divided and division of the mucous membrane to a point corresponding to the limit of division of the skin follows. The mucous membrane is rolled back to the corona and rendered perfectly free. The scissors are used to trim off the redundant fold of skin and mucous membrane on either side of the incision. The redundant fold of skin to the distal side of the frenum is likewise removed. The skin is then drawn back and carefully inspected in order to deal with any irregularity in the cut edge. A tape of gauze a half inch in width and cut so that the edges are frayed is applied, securing the roll of mucous membrane in position behind the corona and compressing the bleeding vessels. The end of the glans is left uncovered so that there may be no obstruction to the meatus. Over the gauze tape a dry gauze pad is placed and the napkin applied.

Dr. S. C. Cotton, Chicago, described a ritualistic circumcision which was very similar to the author's method. He no longer circumcised children so frequently as formerly.

PYELITIS TERMINATING IN SUPPURATIVE NEPHRITIS. CASE AND SPECIMEN.

J. Park West, M.D., Bellaire, Ohio, presented this case. The child from whom the kidneys were taken was a female aged ten months when taken sick. Death occurred twenty-four days later. Had been a healthy child and just been weaned on account of mother's health. Illness could be divided into three periods: first, represented by a lobar pneumonia; second, by pyelitis; and third, by pyelo-nephritis. Only in the last period that vulvo-vaginitis developed. Post-mortem: pelvis of each kidney thick and rough and on the surface a few small spots of distended capillaries. Left kidney weighs 80 gm.; right kidney 72 gm., as compared to 30.1 gm., the average weight for a child of this age. Sections showed remarkable suppurative nephritis. The tubules distended with great quantities of leucocytes and desquamated cells. Absence of glomerular changes and presence of bacteria in the tubules and not in the blood vessels seemed to argue in favor of an ascending rather than a hematogenous infection.

Dr. I. A. Abt, Chicago, said the expert cystoscopist could often throw light upon these cases, especially as to the indications for operation.

Dr. A. Jacobi, New York, said it was a very common experience not to find a vulvo-vaginitis for some time because the process was limited at the time to the uterus; the gonococci are stored away in the uterus. There might be a gonococcic metritis a long time before it makes its appearance.

Dr. C. G. Kerley, New York, had autopsied a case where the child was supposed to have had malaria, but autopsy showed extensive cystitis and multiple nephritic abscesses.

POLIOMYELITIS ANTERIOR ACUTA (AN EPIDEMIC).

Henry Polik, M.D., New York, said the epidemic which visited New York last summer was the most extensive known in New York and possibly in the United States, — something over 1,200 cases, — and his impression was that a great many were not reported to the Board of Health. The disease was quite widely distributed; it did not occur alone in the crowded or filthy districts, but in the best localities. Conditions of the streets were not unusual, there was nothing in the water supply to attract attention, and the milk supply was as good as in previous summers. The general characteristics of the disease did not resemble that which is known as poliomyelitis anterior, but was something new. There were cerebral cases, in which the child apparently healthy would go into a sudden condition of unconsciousness, or develop paralysis of the extremities, with difficulty in respiration and swallowing. In other cases the cerebral condition would abate but there would be complete paralysis. The child might go to bed apparently well and awake with acute pain in the extremities and joints. These cases were often mistaken for rheumatism. Patients would go to bed well and awake with paralysis of the extremities. The term poliomyelitis must be accepted temporarily. In the majority of the neurotic cases the reflexes were increased. The rapid atrophy of the muscles in the cases where paralysis was to remain permanent was striking. As to mode of infection, in most there was some history of intestinal disturbance; in others, a distinct tonsillar inflammation just before the onset of the disease. There was a new infectious agent capable of causing paralysis and even death by its effect on the gray matter. It was sad to see how many children had been incapacitated by this disease. The treatment which seemed to give the best result was that pursued in other forms of neuritis: hot baths, massage, electricity, etc. He advised keeping up the tone of the muscle while the paralysis lasted.

EARLY SYMPTOMS OF THE RECENT EPIDEMIC OF POLIOMYELITIS.

L. E. LaFetra, M.D., New York, said the epidemic in New York did not agree with the ordinary symptoms of poliomyelitis, which begins with vomiting and fever to be followed later by paralysis. He had made a study of the early symptoms in 63 cases. The condition preceding the onset of the disease was not sufficiently uniform to justify any conclusion. Vomiting occurred in 25 cases; constipation in 14; diarrhea in 17. Fever noted as present in 52, probably present in all. Restlessness and irritability very common. In 3 cases marked general hyperesthesia. Convulsions in 4, severe in only 1. Rigidity of the neck in 11, persisting over a week in one. Study of the reflexes was not satisfactory; of 20 cases reflexes absent in 16. In 2 patellar reflex absent on both sides while paralysis involved only one extremity. In no case was tendon reflex exaggerated. Babinski sign present in 3. Apathy present in 10 cases, stupor in 4 cases. Headache noted as present in 10 cases; photophobia present in 3. Pain and tenderness in the limbs in 3. Character of the paralysis: in 58 cases flaccid, in 5 rigidity. Opisthotonos existed five days in 1 case. Lumbar puncture done in 14 cases; fluid clear in every instance and negative as to bacteria. Confusion with meningitis or neurosis very easy in the early stage.

Dr. L. Emmett Holt, New York, said the epidemic was now being studied by a committee appointed by several of the societies, and according to the best information obtained the number of cases in New York was not far from 3,000, so that it was probably the largest epidemic in the world. He had been struck by the number of groups of cases occurring together.

Another striking thing was the number of cases that recovered, and completely. The disease stopped with the advent of October and that had been the history of these epidemics everywhere,— that they ceased with the beginning of cold weather. Examinations suggested that it was perhaps an acute inflammation of the central nervous system, which generally localizes its effects upon the anterior horns but may effect the cerebrum without effecting the cord at all.

Dr. A. Jacobi, New York, did not agree with the view that it was an entirely new disease. He thought that it was not perhaps a disease of the cord itself, but of the whole nervous system. Similar cases had been observed in the extensive reports of Heine in 1840 and 1860. Cases of polio-encephalitis had a greater tendency to get well than cases of poliomyelitis.

Dr. John Lovett Morse, Boston, agreed with Dr. Jacobi that the symptomatology of the cases in this epidemic was not new.

Dr. C. G. Kerley, New York, had seen in this epidemic 43 cases, 13 in the Babies' Hospital, 9 in other institutions, 3 in his own practice and 18 in consultation. He agreed with Dr. Koplik and Dr. LaFetra as to the symptomatology.

Dr. Henry Koplik, New York, in closing the discussion, said that the findings post-mortem in 2 fatal cases at the Mount Sinai Hospital showed areas of softening throughout the cortex, areas of hemorrhage throughout the cord, and areas of softening in the cord. The disease did not affect any other nervous disease that might be in progress at the same time.

A CASE OF APPARENTLY TUBERCULAR MENINGITIS, BUT IN WHICH THE AFTER-HISTORY MAKES IT PROBABLE THAT THE DIAGNOSIS WAS MISTAKEN.

E. M. Buckingham, Boston, presented this case. The patient, a boy of seventeen months, had malaise for from one to two weeks, with cephalic cries. April 10, Dr. J. W. Redmond was called because of some shuffling in walking, confined to one foot. No tenderness.

In the next four days there were vomiting and convulsions. No history of tuberculosis nor of syphilis. The difficulty in walking had nearly disappeared on the fourteenth; strabismus; pupils dilated and sluggish, the right being more dilated than the left. Knee jerks unequal, the right being most marked. Kernig sign marked. Babinski present, but slight. Head not retracted. Ears and gums negative. Provisional diagnosis of tubercular meningitis. Lumbar puncture, the fluid running at first under considerable pressure; perhaps 10 or 12 ccm. was withdrawn. Because of slight contamination in blood in the first cubic centimeter the first portion was thrown away and the last saved in a clean test tube. The pathological report was: specimen consists of 3½ ccm. of clear, colorless watery fluid shaken down in a centrifuge without visible sediment. Lower portion of fluid smeared on slides and stained by Wright. Careful search resulted in the finding of 89 cells, all but 3 of which were lymphoid cells. Diagnosis: Chronic inflammatory, probably tubercular, meningitis. Pressure symptoms were very quickly relieved and in about a week the child had recovered health. He remained well May 20 when Dr. Redmond last saw him. This after-history is compatible with its being one of the comparatively few cases of cerebrospinal meningitis in which there are prodromal symptoms and in which the cerebrospinal fluid contains an excess of mononuclear cells.

(To be continued.)

Book Review.

Medical Gynecology. By Samuel Wyllis Bandler, M.D., Fellow of the American Association of Obstetricians and Gynecologists; Adjunct Professor of Diseases of Women, New York Post-Graduate Medical School and Hospital; Associate Attending Gynecologist to the Beth Israel Hospital, New York City. With original illustrations. W. B. Saunders Company. 1908.

This is a book of 676 pages, printed and bound in Saunders' customary manner. On looking it over for the first time the reader gets the impression that it is hurriedly put together. The unnumbered chapters treat each of a multiplicity of subjects; the language is lacking in clearness and savors of a translation from the German; advice as to treatment is permissive and indefinite, rather than dogmatic and clear; the illustrations, relatively few in number, are so scattered that the reader is puzzled to find any given figure. A careful reading discovers many useful points. There is an excellent chapter on Nauheim baths for gynecological affections, with definite instructions for administering them. Many physicians will hardly agree with the statement on page 128, however, to wit: "That adhesions may be prevented and the organization of adhesions may be avoided by these baths, I believe to be well grounded theoretically and to be proved practically." The chapter on chorio-epithelioma is admirable, and the plates illustrating microscopic sections of chorio-epitheliomatous tissue are particularly well executed. The Ferguson speculum and Ferguson baths are resurrected and given a prominent place under methods employed in medical treatment, and atmocausis and the intrauterine syringe are much to the fore. The author seems to be justified, in treating of rectocele and cystocele, in putting them under the heading, "Vaginal Hernias," but it is not plain why he includes under "Uterine Bleedings" the discharge of blood from any source, beginning with the relatively uncommon source of blood, carcinoma, or sarcoma, of the vagina. In fact, it is a distinct fault observed throughout the book that the important facts from the practitioner's viewpoint are not separated from the unimportant, and the different sections of this textbook are more in the nature of separate essays for the specialist rather than definite instructions for the average physician.

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THE SUPPRESSION OF NOISE.

One of the misfortunes of a large city is its noise, varying somewhat with the character of the city and the employment of its inhabitants, but always present where large bodies of people are gathered together in small compass. That a certain amount of noise is inevitable has led to the general feeling that much noise is no less unavoidable. This is certainly a mistake, and it is well that public opinion should be aroused in the matter, and measures taken to minimize one of the greatest annoyances of city life. For some years a vigorous attempt has been made in New York toward this end with, we believe, gratifying results, although naturally much remains to be done. That unnecessary noises are, however, not wholly confined to large cities must be the experience of those whose lives are cast in the country and even on the shores of the sea. The unmuffled motor boat has become a distinct source of annoyance wherever it has appeared in large numbers. The often unnecessary ringing of bells on street cars and the locomotive whistling nuisance are all subjects which have, to a certain extent, been taken in hand and which may well bear further investigation.

Dr. Samuel H. Durgin, chairman of the Boston Board of Health, has long been interested in the subject of noises, but although fully recognizing the detriment to health which such noises may occasion, the present laws do not give sufficient authority to make possible systematic repression. We have no doubt should the City Board of Health take the initiative in bringing a bill before the next legislature that it will meet with an impressive following on the part of the citizens. It is not open to question that fully half, if not more, of the noises which are now so great an annoyance could be eliminated without detriment to any one's interests and greatly to the public comfort. Whatever the advantages or disadvantages of the somewhat notorious Boston alleys may be, it is evident that they are a prolific source of unnecessary noise. Narrow, often badly paved, and incapable of allowing the passing of two vehicles, the amount of commotion occasioned in the rear of houses which might be expected to be quiet, certainly gives one food for thought. The early morning milkman is a particular offender, chiefly because of the hour at which he makes his rounds and his total disregard of the rights of the citizens as regards protection from noise during these early hours. Milkmen should unquestionably be required to provide their vehicles with rubber tires, and also to set their milk cans down gently instead of banging them against each other and on the sidewalk, as if taking joy in the noise. An equally offensive class of men are those employed by the city to collect ashes. Here again a law against noise should be enforced, which would prevent the totally unnecessary racket of ash cans violently thrown about in a manifestly unnecessary way, to the extreme discomfort of the people as well as to the detriment of the cans. The unnecessary noise of automobile horns of unusual design, the loud talking and often swearing of teamsters, and the innumerable avoidable noises of the streets are all matters which should seriously be taken into consideration in the formulation of a repressive law.

That such noises are more than a mere discomfort in many instances hardly needs reiteration here. Hospitals, not to speak of houses where individuals are ill, are exposed to this pandemonium of noise, particularly in the summer months when windows are of necessity open. The building of hospitals in thickly populated portions of the city for humanitarian purposes naturally exposes them all the more to the noises of the street. To be seriously ill in a city during the summer is an unenviable fate which many naturally are forced to undergo. That the police and boards of health have no adequate means of mitigating one of the most prolific sources of discomfort for such persons is an anomalous state of affairs which should be corrected at the earliest possible moment. We have no question that if the Board of Health takes up the matter in a serious and determined fashion it will receive a backing at any legislative hearings which may follow, which will insure to the city at least a marked improvement in the present deplorable state of affairs. In so far as the suppression of noise does not interfere with legitimate industries and individual liberty, we see no reason why means to enforce it should receive opposition from any source whatsoever.

A DEPARTMENT OF TROPICAL MEDICINE.

The question of a department of tropical medicine in our large medical schools is each year raised with increasing insistence. Quite apart from the possessions which any given country may have in distant and tropical places, it is a perfectly evident fact that through improved methods of travel an increasingly large number of persons are visiting tropical countries where they are likely to be exposed to their peculiar diseases. In other words, as our interests become more cosmopolitan, it is necessary that the training we give our medical students should keep pace. The whole subject has been brought up in an interesting manner by Dr. E. N. Tobey in an article entitled "Tropical Medicine," published in a recent issue of the *Harvard Graduates' Magazine*. Dr. Tobey, whose studies have been directed rather particularly toward the investigation of certain tropical diseases, is peculiarly fitted to speak with some authority on the general subject. The design of his paper is to show the need of a department of tropical medicine at the Harvard Medical School, but his arguments must apply with equal force to other schools of like standing.

The immigration of persons from tropical regions, particularly into this country, is a matter demanding increasing attention from many points of view, not the least of which is the possibility of an influx of tropical disease into the so-called temperate zone. The number of persons from this country living either temporarily or permanently in the tropics is likewise undoubtedly increasing, and is sure to continue to do so for reasons already given and because of the development of trade. It is, for example, reported that recently American engineers have gone to the district of the sleeping sickness in Africa, and American capital has been invested there in furtherance of the rubber trade of the Congo. No doubt the physicians in these regions are well informed as to the diseases peculiar to them, but such is unfortunately not the case when such persons return to this country. In this connection Dr. Tobey reports a somewhat interesting experience on reading a paper on "Filariasis" before a local medical society. It was said at that meeting that only two cases of the disease had been reported at the Boston City Hospital in ten years. When, however, attention has been called to it, Dr. Tobey was able to find in less than a week five cases of the disease in the immediate neighborhood of the city.

It is natural that England should have taken the lead in establishing schools for tropical medicine, considering the wide extent of its tropical possessions. The two schools in that country, one in London and the other in Liverpool, have already a most enviable reputation. Germany, Belgium and France have also given attention to the subject, whereas in the United States what first-hand knowledge we have has been gained through the studies of scattered investigators and government physicians. A few medical schools have lectures on the subject, but no course whatever was given at the Harvard School until this summer. The object of a school of tropical medicine should be twofold, as in fact is that of any other form of instruction: first, to spread already ascertained knowledge, and, secondly, to advance knowledge by research. To carry out such a plan successfully would demand several persons willing to devote their entire time to the subject. It would entail laboratories in tropical regions where first-hand investigations could be carried on. The Panama Canal Zone is suggested as a desirable location for such a laboratory, after the canal has been opened for traffic. The training of the director of such a department should be comprehensive and include protozoölogy, as well as a good working knowledge of bacteriology.

In general, we are in sympathy with the establishment of such a department of tropical medicine under the best possible auspices. Whether individual universities should undertake this work or whether a school of more national significance should be formed, possibly with representatives from the leading medical schools on its staff, are questions of detail which need not here concern us. We are, however, quite in agreement with Dr. Tobey that the time has come for this country to establish a school of this sort corresponding to those existing in England and on the continent of Europe. We have no doubt that when the needs are fully realized the men to carry on the work and the financial support necessary will be forthcoming.

REPORT OF CONSUMPTIVES' HOSPITAL DEPARTMENT.

The Boston Consumptives' Hospital Department has issued its second annual report, a pamphlet of ninety-three pages. Reports of this character are too often perfunctory and stereotyped to be of significance as a contribution to medical knowledge. Such a reproach certainly cannot be visited upon this of the Consumptives' Hospital Department. From beginning to end it gives every evidence of most careful preparation and unquestionably may well serve for the instruction of others intending to establish similar hospitals. The report of the medical staff is particularly worthy of the close attention of students of tuberculosis. Dr. E. A. Locke's work on the subject is well known, and in this report he, as chief of staff, has evidently felt a personal responsibility in presenting a statement of much scientific value regarding the tuberculosis problem of this city. The work of the department has been organized with much care and deliberation, and in spite of the hitherto limited means at the disposal of the trustees, much has already been accomplished. The request is made for $235,000 to be used for building purposes in the ensuing year. It is evident that for the establishment of a modern hospital on however inexpensive a scale funds are primarily needed for building, which later may be expended for other purposes. We commend this report to the attention of our readers as a most admirable discussion of the tuberculosis question in general and particularly as it relates to the needs of this city.

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MEDICAL NOTES.

A Centenarian. — Mrs. Elizabeth McClellan, of Jersey City, N. J., died Aug. 9, at the reputed age of one hundred and two years. She is said to have been active up to her ninety-seventh year.

Deaths in Switzerland. — It is reported that during the month of July, 14 persons were killed and 2 seriously injured while climbing in the Alps. This is beyond the record of any previous year.

War on Mosquitoes. — It is announced that the War Department approves of a continued campaign against the mosquito. Fifty thousand dollars has already been provided for screening barracks and quarters in the Philippine Islands.

Bishop Brent, Senior Commissioner. — The Rev. Charles H. Brent, Episcopal Bishop of the Philippine Islands, is reported to have accepted the position of Senior Commissioner of the American delegation at the International Opium Commission which is to meet at Shanghai the first of next year. Preliminary to this meeting an investigation is to made in various parts of this country as to the use of opium by the people. Bishop Brent has already done much work in connection with the opium question in the East.

Female Nurses for the Navy. — After much hesitation and discussion, a law has recently been enacted by Congress permitting the organization of a corps of female nurses for service in various naval hospitals in this country and abroad. It is expected that about fifty nurses will be required, and the service is to be organized on practically the same basis as is the army service. Miss Esther D. Hassan has been recommended for the appointment of chief hospital nurse of the navy. She has served on the hospital ship *Relief* and on the Isthmus of Panama in the hospital service.

Destruction of Mosquitoes. — According to the *Lancet*, Mr. C. Kenrick Gibbons has presented to the Zoological Gardens of London a large number of the small fresh-water fish from Barbados known as "millions" (Girardinus poecilloides). These little fish, which have been placed in a tank in the Tortoise House, are of special interest because of their supposed action in preventing malaria. Malaria is very much less common in Barbados than in other West Indian islands, and it has been suggested that this freedom is due to the presence of enormous quantities of the "millions" in the fresh-water pools. The little fish are very voracious and destroy large numbers of the larvæ of mosquitoes that spread malaria. The males are about half an inch long, with brilliant iridescent colors and large black spots on the sides. The females are considerably larger and less highly colored. It is understood that experiments are going to be made with the introduction of these fish into tropical countries where malaria is prevalent.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Aug. 11, 1908, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 24, scarlatina 22, typhoid fever 23, measles 18, smallpox 0, tuberculosis 36; cerebrospinal meningitis 0.

The death-rate of the reported deaths for the week ending Aug. 11, 1908, was 18.03.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, August 8, 1908, was 214, against 222 the corresponding week of last year, showing a decrease of 8 deaths and making the death-rate for the week 18.03. Of this number 111 were males and 103 were females; 206 were white and 8 colored; 145 were born in the United States, 65 in foreign countries and 4 unknown; 45 were of American parentage, 145 of foreign parentage and 24 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 28 cases and 1 death; scarlatina, 32 cases and 4 deaths; typhoid fever, 19 cases and 1 death; measles, 24 cases and 0 deaths; tuberculosis, 64 cases and 18 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 13, whooping cough 2, heart disease 21, bronchitis 1 and marasmus 13. There were 8 deaths from violent causes. The number of children who died under one year was 75; the number under five years 99. The number of persons who died over sixty years of age was 43. The deaths in public institutions were 88.

Cerebrospinal meningitis, 1 case and 1 death.

Closing of St. Margaret's Hospital, Boston. — The well-known private hospital in Boston known at St. Margaret's, and conducted by the Episcopal Sisters of St. Margaret, is temporarily closed owing to the fact that the lease of the present property has not been renewed. Although nothing definite has as yet been given out, it is expected if suitable quarters can be secured that the hospital will later be reopened.

The Dublin, N. H., Chemical and Pathological Laboratory. The Dublin Chemical and Pathological Laboratory has been founded by some public-spirited men and women of Dublin. Its purpose is to afford an opportunity to the medical profession of the vicinity for making use of some of the modern methods of research. It is intended to serve as an aid in medical practice, but in no wise to interfere with the relation between physician and patient. It will undertake to study questions of public health as well as to perform the more precise examinations of secretions and excretions which are in use to-day, but which require more leisure and special technical manipulation than practitioners can afford to give.

Annual Report of Carney Hospital, Boston. — According to the recently issued report of the Carney Hospital, South Boston, the average number of patients receiving treatment during the year 1907 was 2,600, and 56,000 at the new outpatient department. Although a sectarian institution, no distinctions are made in the treatment of those applying, and as many religious sects as the city contains are said to be represented in the number treated. A plea is made for financial support, and there can be no question that the charity is a most worthy one. This hospital has recently introduced the continuous service system and stands as an example of progressive hospital management.

NEW YORK.

Responsibility in Automobile Accident. — On Aug. 4, the coroner's jury which investigated the death of Dr. Carlton Flint, at Seabright, N. J., rendered a verdict holding responsible both the owner and the chauffeur of the automobile by which he was fatally injured. At the inquest several witnesses testified that the car was going at a rate variously estimated at from forty to seventy miles an hour. The reports published at the time of Dr. Flint's death stated that the chauffeur was using it without the owner's permission or knowledge.

Bequests. — The report of the transfer tax appraiser on the estate of the late Dr. John Ordronaux, formerly of New York, was filed on Aug. 7 in the Surrogate's Court at Mineola, Nassau County, Long Island. The total amount of taxable property is $2,757,000, and among the bequests made in the will are the following: Mary Hitchcock Memorial Hospital, Hanover, N. H., $6,000; Morton Hospital, Taunton, Mass., $6,000; Dartmouth College, $30,000; University of Vermont, $10,000; Trinity College, Hartford, $10,000; Boston University, $2,000.

Mortality. — Notwithstanding the much higher temperature prevailing, it is gratifying to find that the mortality in the city during July was very materially lower than in the same month last year. The two death-rates were respectively 17.87 and 20.16, and that of 1908 is considerably lower for the month of July than for several years past. The decrease from last year is found in the deaths from diarrheal diseases in children under five, as well as in the general mortality, though here the difference is not so marked. The number of deaths in tenement houses in the last week of July was 320 less than in the corresponding week in 1907. There were no marked increases in the number of deaths over June with the exception of diarrheal diseases, but among the diseases which showed an augmented fatality were the following: The weekly average of deaths from typhoid fever increased from 7 in June to 11.5 in July; the weekly average from whooping cough, from 4 to 5; from epidemic cerebrospinal meningitis, from 4.5 to 7.5; from cancer, from 58.75 to 64.75; from organic heart diseases, from 107.75 to 109.75; from Bright's disease and acute nephritis, from 77 to 82.75; from diarrheal diseases, from 96 to 412.75; and from diarrheals under 5 years of age, from 89.75 to 399.25. Among the diseases which showed a decline in mortality were the following: The weekly average of deaths from measles decreased from 18.75 to 11.25; from scarlet fever, from 26.75 to 10.75; from diphtheria and croup, from 30 to 23.5; from pulmonary tuberculosis, from 163 to 161.75; from acute bronchitis, from 11 to 8; from pneumonia, from 52.25 to 34.75; from broncho-pneumonia, from 66.5 to 47; from apoplexy, congestion and softening of the brain, from 36.5 to 28; and from cirrhosis of the liver, from 17 to 16. The weekly average of deaths from diarrheal diseases under five in July, 1907, was 421.25; so that the reduction to 399.25, notwithstanding the much hotter weather as well as the increased population, this year, is a matter for congratulation. It is to be noted that while the infant mortality was somewhat higher in the earlier part of the month in 1908 than in 1907, it was much lower in the latter part than in 1907. The highest mortality in July, 1907, was in the third week of the month, when the number of deaths reported was 550; while this year the greatest number of deaths, which was 426, was reached in the second week. The corrected general death-rate for the month (excluding non-residents and infants under one week old) was 16.95.

Report of Commission on Hospitals. — The Commission on Hospitals, consisting of the Hon. Edward M. Grout, chairman, and twenty-one other members, which was appointed two years ago by Mayor McClellan, to thoroughly investigate the hospital situation in the city, and recommend such changes as were deemed advisable, filed its report on Aug. 8. The commission finds that the hospital facilities are inadequate and inequitably distributed and that much confusion exists, with divided responsibility and control, owing to the fact that the public hospitals are under the management of three separate departments, the Health, the Public Charities, and the Bellevue and Allied Hospitals, each of which has its own institutions. Altogether, the report states, three fire or three police departments would as logical as the present hospital system. The first change recommended, therefore, is the establishement of a new department of the city government, to be called the Department of Public Hospitals, which shall consist of a commissioner (who presumably would be a salaried official), and a board of seven trustees to serve without compensation. To it should be intrusted the management of all public hospitals, infirmaries and ambulance relief stations, with authority to make rules and regulations and to extend the hospital system as required. The creation of such a department would naturally involve the abolition of the board of trustees of Bellevue and Allied Hospitals, which at present controls four large public hospitals. The present ambulance service is severely criticised, and a detailed outline is given of a complete system to be carried out under the new régime. This includes the concentration of the service, with an executive officer in each borough; municipal ownership of ambulances, the redistricting of the city for ambulance purposes, and the establishment of emergency relief stations in congested localities. A general extension of the hospital system is urged, especially in the boroughs of Brooklyn, Queens and Richmond, where the facilities are now inferior to those in Manhattan and the Bronx. Among the special changes and developments recommended are the following: Additions to the City Hospital and the Metropolitan Hospital on Blackwell's Island which will increase the capacity of each to 1,500; the removal of the penitentiary from Blackwell's to Hart's Island, and the establishment on the site of the latter institution of a psychiatric hospital; the releasing to the state of Ward's Island, where the Manhattan State Hospital for the Insane has been located ever since the care of the insane poor was transferred to the state authorities; the enlargement of the Kings County Hospital, Brooklyn, which now has 600 beds, to a capacity of 1,500; the establishment of a hospital park for children on Randall's Island, where the New York City Children's Hospitals and Schools have long been conducted by the Department of Public Charities. The commission has paid much attention to the subject of the care of tuberculosis patients, and its principal recommendations in this regard are the speedy completion of the sanatorium for incipient cases at Otisville, Orange County, and of the Sea View Hospital on Staten Island for consumptives in intermediate stages, and the construction of a large and well-equipped hospital on Blackwell's Island for those in the last stages.

Current Literature.

Medical Record. July 4, 1908.

1. Collins, J. *The Miracles at the Tomb of B. François de Paris.*
2. Gleitsmann, J. W. *Recurrent and Abductor Paralysis of the Larynx. Introductory Remarks on Anatomy and Physiology; Etiology of Paralysis of Central Origin.*
3. Einhorn, M. *A Suggestion as to the Dietetic Treatment in Dilatation of the Esophagus.*
4. Disen, C. F. *Inflammation of the Circumflex Nerve.*
5. Moeller, H. N. *On Unusual Cases of Cerebrospinal Meningitis Treated with Anti-Meningitis Serum.*
6. Taylor, F. L. *Collapse after Injecting Diphtheria Antitoxin.*

New York Medical Journal.
July 4, 1908.

1. Brown, L. *Dissecting Aneurysm of the Aorta and Pulmonary Artery Following Rupture of the Arch of the Aorta.*
2. Hunt, J. R. *The Relation of Locomotor Ataxia and Paresis.*
3. Mayer, E. E., and Proescher, F. *Glioma of the Brain.*
4. Kime, J. W. *Light in the Treatment of Disease as Used at Boulder Lodge Sanatorium, Fort Dodge, Ia.*
5. Grace, R. *Another Method of Regulating Pressure in the Bier Treatment.*
6. Freundlich, D. B. *Broken Jaws.*
7. Gleitsmann, J. W. *Treatment of Tuberculosis of the Upper Air Passages.*
8. Camp, C. D. *A Case of Post-Diphtheritic Multiple Neuritis with Vesical Involvement.*

July 11, 1908.

1. Hirst, B. C. *A Review of the Course in Obstetrics in the University of Pennsylvania.*
2. Knopf, S. A. *A Plea for More Sanatoria for the Consumptive Poor in All Stages of the Disease.*
3. Sichel, C. C. *The Significance of a Blood Analysis in Appendicitis.*
4. Stein, S. A. *The Management of Chronic Endocarditis during the Stage of Compensation.*
5. Dannreuther, W. T. *A Practical Consideration of Delirium Tremens, with Special Reference to Its Treatment.*
6. Welker, W. H., and Ditman, N. E. *On Some Biochemical and Anatomical Changes Induced in Dogs by Potassium Cyanide.*
7. Ballenger, E. G. *Paroxysmal Hemoglobinuria.*
8. *Allen, D. B. *Treatment of Erysipelas.*

8. Allen advises painting the area of erysipelas, except on the eyelids, with crude carbolic acid, extending the painting just beyond the line of demarcation. When the surface becomes white it is washed off with 95% alcohol. This treatment as a rule immediately cuts short the attack. [R. I. L.]

July 18, 1908.

1. Polak, J. O. *The Cesarean Operation: Indications and Technic.*
2. Knott, J. *Dies Caniculares.*
4. Knowles, F. C. *Syphilis Extragenitally Acquired in Early Childhood.*
4. Stetten, DeW. *The Modern Administration of General Anesthesia in Mouth, Nose and Pharynx Surgery.*
5. McKennan, T. M. T., and Proescher, F. *A Case of Neuroglioma Gangliocellulare of the Brain: Operation: Recovery.*
6. Bassler, A. *A New Corset for Gastroptosis.*
7. Levitt, M. J. *A Case of Dermoid Tumor of the Conjunctiva.*
8. *Levin, I. *Renal Pyuria without Apparent Lesion in the Kidney.*

8. Levin reports two cases of pyuria, with symptoms referable to the right kidney. In both, cystoscopic examination showed a normal bladder, with pus coming from the right ureter. At operation the kidney was incised but no lesions found. After operation in both cases the pyuria ceased immediately and there were no further symptoms. [R. I. L.]

The Journal of the American Medical Association.
July 4, 1908.

1. Weisenburg, T. H. *Neurologic Teaching in America.*
2. Bogue, E. A. *The Growth of Educational Requirements and Opportunities in Stomatology.*
3. Gaver, E. E. *A Case of Alternating Personality.*
4. Fry, F. R. *The Attitude of Neurologists Towards Electrotherapy.*
5. *Dunn, C. H. *The Serum Treatment of Epidemic Cerebrospinal Meningitis.*
6. *Churchill, F. S. *Treatment of Meningococcic Meningitis with Flexner Serum.*
7. Tuholske, H. *Observations on the Thyroid and the Parathyroids.*
8. Zenner, P. *Cases of Very Generalized Polyneuritis.*
9. Noel, L. G. *Pathology in Dental Colleges.*
10. Purdum, H. D., and Wells, R. E. *Dementia Precox.*
11. Bliss, M. A. *Psychotherapy.*

5 and 6. Dunn treated 40 cases of epidemic cerebrospinal meningitis with the Flexner serum, with a mortality of 9. Churchill treated 11 cases, with a mortality of 4. Their cases are confirmatory of the good results reported by Flexner in the *Journal of Experimental Medicine*, January, 1908. Both writers agree that the serum is of great value. [R. I. L.]

July 11, 1908.

1. Beevor, C. E. *The Co-ordination of Single Muscular Movements in the Central Nervous System.*
2. *Gordon, A. *Insanities Caused by Acute and Chronic Intoxications with Opium and Cocain.*
3. Brenneman, J. *The Feeding of the Healthy Infant.*
4. Uhler, A. A., and Mackinney, W. H. *Clinical Observations on Antigonococcic Serum.*
5. Dercum, F. X. *Elements of Psychiatric Prognosis.*
6. *Starr, M. A. *Epidemic Infantile Paralysis.*
7. Holden, W. A. *The Optic Nerve Changes in Multiple Sclerosis.*

2. Gordon fails to find in the acute or chronic morphinism and cocainism the typical picture of any of the well-known psychoses. Cocain has a peculiar tactile hallucination. But there is no essential difference from the intoxications from other sources. In the acute forms there is confusion. In the chronic form all varieties of intoxication invariably lead to the gradual enfeeblement of mentality, viz., dementia.

6. Starr gives a summary of the 2,000 cases of epidemic infantile paralysis that occurred in New York last year. The onset of the disease was uniformly accompanied by fever. The paralysis was observed in the third or fourth day. Pain was a very marked symptom in almost all the cases and was usually greater in the paralyzed part. Anesthesiæ were not observed. The acute symptoms subsided in about ten days and the long slow improvement set in. In many cases a complete recovery has ensued. The mortality was about 6% or 7%. Bacteriologic examination of the blood, cerebrospinal fluid and the various organs was negative. A biologic study of the cerebrospinal fluid was fruitless. Efforts at complement binding were negative. Apparently the diagnosis of poliomyelitis by means of a serum is, therefore, not possible. It is uncertain whether the causative agent is a micrococcus or a toxin, but the writer is inclined to the latter hypothesis. At the time of the epidemic other infectious diseases were not particularly prevalent. The summer was not unusually hot, but was unusually dry. No other facts were brought to light which might in any way explain the presence of this unusual epidemic. [R. I. L.]

July 18, 1908.

1. Jones, W. A. *Disease of the Cerebral Vessels with Its Problems in Diagnosis.*
2. Tomlinson, H. A. *Cerebral Inhibition with Relation to Motor Function.*
3. Zentmayer, W. *Imperforation of the Lachrymonasal Duct in the Newborn and Its Clinical Manifestations.*
4. Stow, B. *The Correlation of Clinician, Pathologist and Layman.*
5. *Harbin, R. M. *Typhoid Fever. A Summary of One Hundred and Forty-Eight Cases with Reference to the Efficacy of Therapeutic Fasting.*

6. Walton, G. L. *Migraine, an Occupation Neurosis.*
7. Woods, H. *Ocular Complications of Pregnancy.*
8. Black, M. *The Relation of Ocular and Cardiovascular Disease.*
9. *Allen, A. R. *Hemorrhage into the Ventricles.*
10. Heath, F. C. *Zonular Opacity of the Cornea.*

5. Harbin has treated 148 cases of typhoid fever with therapeutic fasting, with a mortality of 4.7% and with relapses in 3.3%. The writer believes that emaciation occurs independently of the amount of food taken and, moreover, that food often incites toxemia. In his plan of treatment cases are fasted from one to three days until the active symptoms are controlled. In the anemic, senile and debilitated cases, fasting should not be applied, but the writer believes that in those cases there are rarely the severe symptoms that call for its use. Milk in this régime is absolutely prohibited. Gelatin is given as a routine, as it lessens the nitrogenous waste and prevents hemorrhage. Water is allowed but not forced.

9. Allen, from a study of 10 cases of hemorrhage into the ventricles, concludes that ventricular inundation in cerebral hemorrhage has no etiologic bearing on the convulsions or rigidity. [R. I. L.]

Archives of Internal Medicine.

June, 1908.

1. *Hamman, L. *The Use and the Value of Tuberculin in the Diagnosis of Pulmonary Tuberculosis.*
2. *Emerson, H. *An Experimental and Critical Study of the Etiology of Chronic Nephritis.*
3. Rogers, L. *The Prevention of Tropical Abscess of the Liver by the Early Diagnosis and Treatment of the Pre-Suppurative Stage of Amebic Hepatitis.*
4. *Willson, P. *Snake Poisoning in the United States: A Study Based on an Analysis of Seven Hundred and Forty Cases.*

1. The author summarizes his results as follows: That while tuberculin is a valuable aid in the diagnosis of pulmonary tuberculosis, it must be used with care, and the results interpreted with caution. He believes that the reaction is a specific one, but it must be borne in mind that a very insignificant lesion may produce tuberculin hypersensitiveness, and the prevalence of such lesions should be fully realized. A negative reaction we consider as decisive information, as is also a focal reaction. In the absence of a focal reaction, tuberculin hypersensitiveness must be viewed as one phase of the clinical picture, and our judgment must not be too much warped by its presence. As a clinical procedure no routine scheme can be advised, since we must alter our methods to meet conditions as they arise. The cutaneous reaction is too delicate an indicator to be of any value in diagnosis unless the reaction be negative, which it seldom is in adults. The eye reaction gives results more nearly in accord with clinical experience, but by no means of absolute certainty. The author feels that it cannot supplant the subcutaneous method, and that it will be well for some time to use the two together, but not simultaneously. The eye inoculations should precede the subcutaneous by at least a few days.

2. Emerson reports an experimental and critical study of chronic nephritis. By the use of an inhalation apparatus, the effect of general vasodilators, as alcohol, ether, chloroform and amyl nitrate, was studied. The effect of mechanical injury of the kidney and the results of the direct injection of drugs into the kidney substance was also tried, and finally the effect on the kidney of increased viscosity of the blood, due to the addition of gelatin to the blood stream, and also of solutions of adrenalin chlorid and lead acetate injected intravenously. He also discusses the literature on the subject. His conclusions are as follows: From experimental results it would appear that interference with the blood supply of the kidney can be accomplished by means of chemical injury to the renal parenchyma, and that the process of repair which ensues may involve such a destruction of secreting tissue as to cause the death of the animal. From the experimental use of vasodilators, it appears that the kidney suffers at least mild grades of degeneration, which may be due, not to the specific renal irritation of the drugs employed, but to the defective blood supply which frequently repeated vascular relaxation causes. From an analysis of the accepted causes of chronic nephritis in man, it is evident that many of them have, as a common factor, a more or less severe and prolonged stagnation in renal blood supply, and although this factor is often accompanied by the presence of irritants which we recognize as injurious to the kidney tissue, insufficient blood supply alone will cause, first, an error in function and later an alteration in the structure of the kidney.

4. The author presents a very careful study of snake poisoning in the United States based on 740 cases collected from the literature, and other sources. He presents a very complete description of the different varieties of poisonous snakes, and gives the location of the different species. He finds the mortality of all cases of snake-bite to be 10%. The most important complications are sepsis and acute alcoholism. The local treatment, having for its object the limiting of venom absorption, is of great importance; in order to be effective it must be both prompt and radical; in all surgical procedures round the wound, special precautions must be taken against infection. The ideal constitutional treatment by means of antisera is now absolutely impracticable, and, therefore, little can be done other than keeping the patient quiet and warm; the administration of adrenalin and salt solution; the use of such mechanical means as bandaging, abdominal compression, and posture, to keep up the blood pressure and circulation in the vital centers; and the institution of artificial respiration when indicated. [W. B. R.]

Surgery, Gynecology and Obstetrics.

July, 1908.

1. Watkins, T. J. *Perineorrhaphy for Complete Lacerations.*
2. Coons, J. J. *Primary Carcinoma of the Appendix.*
3. *Martin, F. H. *Transplantation of Ovaries.*
4. Baldy, J. M. *American Gynecological Society. The President's Address.*
5. Smith, A. L. *Cesarian Section Versus Sections of the Pelvis in Dealing with Mechanical Obstructions to Childbirth.*
6. *Grandin, E. H. *Immediate Versus Delayed (Expectant) Operation in Case of Ectopic Gestation.*
7. *Polak, J. O. *A Report of Fifty-Two Pregnancies and Labors Following Ventro-Suspension of the Uterus for Retro-Displacements.*
8. Sampson, J. A. *Suggestions in Teaching Gynecology, with Demonstration of Special (Mechanical) Charts as an Aid in this Work.*
9. *Cragin, E. B. *Ventro-Suspension an Unsafe Operation for Posterior Displacement of the Uterus During the Child-Bearing Age.*
10. Barkley, A. H. *Some Observations on Acute and Chronic Appendicitis.*
11. *Buhlig, W. H. *So-called Phlebitis of the Left Leg, Following a Case of Appendicitis not Operated upon, with Some Theoretical Considerations of the Etiology of Post-Operative Phlebitis.*
12. Willis, M. *The Factor of Mortality in the Operation of Hysterectomy.*
13. *Clarke, W. C. *The Pathogenesis of Ganglia, with a Description of the Structure and Development of Synovial Membrane.*
14. *Vineberg, H. V. *Immediate Versus Deferred Operation for Intra-Abdominal Hemorrhage Due to Tubal Pregnancy.*
15. *Simpson, F. F. *Deferred Operation for Intra-Abdominal Hemorrhage Due to Tubal Pregnancy.*

3. Martin reports 3 cases of hetero-transplantation and 5 of homo-transplantation of ovarian tissue, describing the technic of the procedure and of reconstruction of patent oviducts. Of the former group, one was not benefited, the others had slight return of menstruation and relief of nervous symptoms following artificial menopause. Of the latter group, one was not heard from, the rest reported regular and normal continuance of catamenia. From a review of the literature, including animal experiments, the author states his belief that ovarian homotransplantation, by saving small fragments of healthy tissue from organs that must be sacrificed in gross, will preserve menstruation and prevent premature genital

atrophy, and may even be followed by conception and normal pregnancy.

6. Grandin favors immediate laparotomy for ruptured tubal pregnancy as soon as the diagnosis is made, believing that delay for recovery from shock and obtainment of better surroundings involves more risk than a prompt operation that effectually stops hemorrhage and removes the possibility of its recurrence.

7. From a series of 687 cases of ventral suspension, in 416 of whom conception remained possible, Polak reports 52 subsequent pregnancies and labors without more than the normal percentage of complications, none of which could be attributed directly to the suspension. In his opinion this establishes the safety and desirability of the operation for correction of uterine retro-displacement.

9. On the ground that an intended ventral-suspension may become a fixation from infection or subsequent adhesions, Cragin declares it an unsafe and undesirable operation for correction of uterine retro-displacement prior to the menopause, and reports a case in which normal pregnancy and labor followed a year after suspension, but in which, five years later, at Cesarian section for transverse position and failure of progress, the suspension band was found thick and unyielding and was presumably the cause of the dystocia.

11. Buhlig reports a case of phlebitis following an unoperated acute appendicitis to emphasize the probable infectious origin of post-operative phlebitides.

13. In an extensive historic and pathologic study, Clarke investigates the cause of ganglia and concludes that they probably represent either a hydrops of anatomical or adventitious bursæ, or more often connective tissue cysts formed by degeneration excited by unknown factors, presumably traumatic, perhaps infectious.

14. While recognizing that 95% of all cases of tubal rupture or abortion recover if operation be deferred for reaction from shock, Vineberg urges the imperativeness of immediate operation in cataclysmic cases with massive hemorrhage. In such cases, he believes the first hemorrhage, if unchecked, is so likely to be fatal that delay is unjustifiable.

15. Simpson presents figures from the literature and from his own experience tending to show that immediate has a much higher mortality than delayed operation for hemorrhage from tubal pregnancy. He reiterates the rarity of fatal result from primary gastric, intestinal, pulmonary or uterine hemorrhage, and states his opinion that though immediate operation may sometimes be desirable, it is generally wiser to wait for partial recovery from the first hemorrhage under suitable treatment. [R. M. G.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT. No. 22.

JUNE 2, 1908.

1. MEYER, E. *Further Investigations on Extra-Uterine Blood Formation.*
2. *SCHATILOFF, P. *The Histologic Changes in the Blood-Forming Organs in Pernicious Anemia.*
3. DEETJEN, H. *Spirochetæ in the Carcinomata of Mice.*
4. ESSER. *Congenital Syphilis of the Suprarenal Capsule. Also a Contribution to the Question of the Origin of Isolated Suprarenal Tuberculosis.*
5. SANDBERG, G. *The Demonstration of Long Bacilli in the Feces, and Their Clinical Significance.*
6. *RANKE, K. E. *The Diagnosis of Tuberculosis of the Lungs.*
7. v. HERFF, O. *Radicalism or Conservatism in the Treatment of the Narrow Pelvis. Which?*
8. POLANO, O. *Cesarian Section and Lumbar Anesthesia.*
9. LANGER, J. *Propositions Towards a Medicinal Prophylaxis of Measles.*
10. STUMPF. *Bolus Treatment in Diphtheria.*
11. OEKEN. *A Case of Laceration of the Thoracic Duct Following Crush of the Chest.*
12. KREISCH, E. *Vaginal Cesarian Section in Eclampsia.*
13. HORWITZ, L. *A Case of Idiosyncrasy for Fowl Albumin.*
14. TEXTOR. *Ignition of Ether Vapor in the Breath.*
15. ZACHARIAS, P. *Two Cases of Tetanus after Gynecologic Operations.*

2. Schatiloff reports 4 cases of pernicious anemia with autopsy records and description of the histologic findings in the blood-forming organs. In all the cases metaplastic changes were constant in the spleen, less marked in the lymph glands and not present in the liver. In the spleen and lymph glands neutrophilic myelocytes were found. In no case was a hyperplasia of the lymphatic tissue found; in fact, the follicles of the spleen were smaller than normal, those of the lymph glands of ordinary size. No increase in lymphoid tissue in the liver was seen in any case.

6. Ranke gives the results of physical examination of the lung apices and compares them with post-mortem findings in cases which were known to be dying, so that the chance of comparison was highly probable. He concludes that the diagnosis of incipient tuberculosis can never be made absolutely on auscultation and percussion alone, and may often be very closely simulated by other pathologic and physiologic conditions; also that for a diagnosis of early tuberculosis too much stress should not be laid on one or two signs, such as dullness, with retraction, unless the other signs are present. The presence of dullness alone is of little importance without the other signs of apical infiltration. The author does not believe that an infiltration smaller than a cherry is recognizable by physical examination alone. [R. D.]

No. 23. JUNE 9, 1908.

1. NAUWERK, C., AND FLINZER, E. *Paratyphoid and Melena of the Newborn.*
2. *HAMBURGER, F. *The Action of Old Tuberculin on the Non-Tuberculous.*
3. HUBER, J. M. *The Epidemic of Cerebrospinal Meningitis in the Palatinate in the Spring of 1907.* (Continued Article.)
4. HESSE, G. *Goiter and Its Treatment.*
5. LUNCKENBEIN. *Vaginal Cesarean Section in Practice.*
6. PORT, K. *The "Graser" Operation for Large Umbilical and Abdominal Herniæ.*
7. ESCHBAUM, O. *Four Operations on the Stomach following the Mistaking of Gastric Crises for Pyloric Stenosis.*
8. VOGEL, K. *Trauma and Appendicitis.*
9. SCHWARZ. *A Case of Fibromatous Thickening of the Achilles Tendon.*
10. GEBELE. *Inflammation of Meckel's Diverticulum.*
11. KIRSCH, E. *Transplantation of the Peroneus Tendon.*
12. KRAUS, O. *Bladder Irrigation.*
13. SCHMIDT, H. *The Treatment of Ozena: Gargling with Closed Mouth.*
14. PETERS, A. *Congenital Word Blindness.*
15. STEINBERG, W. *The Appetizing and the Distasteful Qualities of Food.*

2. Hamburger has injected lesser and greater doses of old tuberculin into 43 healthy children, ranging from a few months to fourteen years old. The doses varied between 10 and 100 mgm. and in one case, a six-year-old girl, 500 mgm. were injected. In no case was the slightest reaction noted, either local or general. This goes to prove that in the non-tubercular individual the old tuberculin has no toxic action whatsoever. [R. D.]

BERLINER KLINISCHE WOCHENSCHRIFT. No. 22.

JUNE 1, 1908.

1. *BRIEGER, L., AND TREBING, J. *The Antitryptic Power of Human Blood Serum, Especially in Persons with Cancer.*
2. KRÖMER, J. *The Experiences with Pubiotomy of the Royal University Charity Clinic for Women.*
3. LIEPMANN, W. *Bacteriology and Prognosis.*
4. *BLUMENTHAL, F., AND WILE, U. J. *Complement-fixing Substances in the Urine of Syphilis Patients.*
5. *WOLFF, W., AND v. TOMASZEWSKI, Z. *Pepsin and Pepsin Quantitation by Means of the Edestin Test.*
6. OBRASTZOW, W. *Intermittent Bisystole and the Appearances in the Arteries in Aortic Insufficiency.*
7. MÜLLER, E. *Contribution to the Question of the Natural Nutritious Elements in Human Milk.*
8. WILENKO, G. G. *Pepsin Excretion in the Urine.*

1. The antitryptic power of the blood is usually present, as may be recognized by the fixation bodies. The author mixed blood serum with a 1% trypsin solution on a "serum plate." By observing the reaction, the antifermentative action of the serum can be determined. In

known carcinoma cases an increase of fixation appeared; also in a certain number of benignant tumors the same was true. Diabetes, nephritis, tuberculosis and syphilis show no constant reaction, but in the blood diseases an increase in the fixation power of the blood was noted.

4. Blumenthal and Wile observed the complement-fixing properties of urine and blood serum in 50 cases. Forty-one were known to be syphilitic, and 9 were non-syphilitic. In 31 syphilitic cases, complement-fixing substances were found in both urine and blood serum. In 6 cases no reaction in either urine or serum was obtained. Whether the urine is to be of importance in the diagnosis of syphilis is still an open question.

5. The Edestin (vegetable albumin) test for pepsin of Field and Levison consists in treating different dilutions of gastric juice with an edestin HCl solution, and observing the amount of precipitation after incubation and addition of sodium chloride. [The method is described at length in this article.] The authors have examined a series of gastric juices taken after test meals and from the fasting stomach. Cases with normal acid show constantly a pepsin value of approximately 100. The differences become much greater with hyperacidity, and in organic anacidity the pepsin content is extremely low. There seems, however, to be no proportional relation between the amount of acid and of pepsin. Gastric ulcer usually has a normal amount of pepsin; in cancer of the stomach and gastric catarrh, the pepsin is low, while in neuroses the largest amounts of pepsin are found. [R. D.]

No. 23. June 8, 1908.

1. Fugoni, C. *A Remarkable Complication of Myeloid Leukemia.*
3. Kanasugi, H. E. *Laryngeal Disturbances in Beri-Beri.*
3. Glaser, F. *An Epidemic of Microsporia.*
4. Strauss, H., and Fleischer, F. *The Clinical Significance of Turgosphygmographic Pulse Picture.*
5. *Einhorn, M. *Intestinal Dyspepsia.*
6. Gabriel. *Diphtheria.*
7. Gabriel. *Contribution to the Knowledge of Chronic Pharyngeal Diphtheroid.*
8. Davidsohn, F. *Fracture of the Distal Phalanx of the Finger following Avulsion of the Extensor Tendon.*
9. Senger, E. *The Treatment of Lupus with Tuberculin Salve, and a Specific Skin Reaction from Tuberculin Inunction.*
10. Engel, C. S. *Reversion to Embryonic Blood Formation.*
11. Ruhemann, J. *Spirosal.*

5. Under the heading, "intestinal dyspepsia," Einhorn places two groups of digestive disturbance: First, those in which proteids, carbohydrates and fats are ill borne, and secondly, those in which only one of these causes trouble. These may occur alone or complicated with other intestinal conditions, and may or may not have demonstrable lesions. To differentiate between these different "dyspepsias" the author has used the so-called "perle test." The reports of 7 illustrative cases are included. [R. D.]

Die Therapie der Gegenwart. Heft 6.

June, 1908.

1. *Brauer, L. *The Treatment of Chronic Lung Diseases by Collapse of the Lung.*
2. Herz, M. *Injury of the Heart by Improper Posture.*
3. Moeller, A. *The Cause and Treatment of Asthma.*
4. Sternberg, W. *The Treatment of Gastric Ulcer by Means of Rational Cooking.*
5. Schabad, L. A. *Phosphorus and Cod Liver Oil in the Treatment of Rachitis. Its Influence on Calcic Metabolism.*
6. Mühsam, R. *The Permanent Bath in Surgery.*

1. In artificial pneumothorax for the treatment of tuberculosis of the lungs, abscess, bronchiectasis, etc., the main objects are rest for the lung, and compression. In cases where the pleura is not involved the procedure is very simple, and exact dosage of the gas injected is easily obtained. Where the pleura is involved, a more complicated operative procedure is sometimes necessary. Nitrogen is the gas injected, and to be successful the treatment should be continued over a long period of time. The treatment is especially indicated where other methods have failed, or cannot be made use of. The only danger is of air embolus, and this, when the operation is carefully carried out, is small. Skin emphysema is not uncommon, but not dangerous. Brauer has never seen a spread of the infection, nor other complications follow. The treatment is of most value in severe phthisis confined to one lung, and in bronchiectasis, when the cavities are compressible. General bronchiectatic dilatation, especially of long standing, does not lend itself well to this method of therapy. The few post-mortem observations on patients thus treated show a well-started healing process and a recession of the diseased areas. The clinical results are almost immediate betterment of symptoms, lessening of fever, cough and sputum, with gain in weight and strength. The general improvement of the patient affects the condition in the other lung favorably when such exists. Brauer has never seen a new focus of disease appear in the other lung after artificial pneumothorax had been made. Occasionally a serous exudate appears in the pneumothorax cavity, which, when uninfected, as it almost always is, is of no consequence. [R. D.]

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Obituary.

GEORGE MICHAEL EDEBOHLS, M.D.

Dr. George Michael Edebohls, the well-known New York surgeon and gynecologist, died at his home in that city on Aug. 8. He had been ill for some time, and his death is stated to have been due to Hodgkin's disease. He was born in New York City in 1853, and was a graduate of St. John's College, Fordham. He received the degree of M.D. from the College of Physicians and Surgeons, New York, in 1875. Dr. Edebohls was especially identified with renal decapsulation for chronic Bright's disease, a procedure which he originated. The first operation of this kind which he undertook with the deliberate purpose of bringing about a cure in chronic Bright's disease was performed in January, 1898. The patient, a girl of twenty at the time, was afterwards married, and five years later he reported her as five months pregnant and permanently cured of her kidney disease. The report of this operation, together with that of five preceding operations which led up to it, was published in the *Medical News* of April 22, 1889. In 1901 and 1902 several articles by him on the subject appeared in the *Medical Record*, and in February, 1903, he read before the Medical Association of the Greater City of New York an elaborate paper embodying his experience and that of other surgeons with the Edebohls operation up to that time. This paper was published in the *Medical Record* of March 28, 1903. Although he by no means claimed that renal decapsulation was universally applicable, and was careful to define its limitations as far as possible, there has always been much dispute as to the real value of the procedure. Dr. Edebohls was for many years Professor of Diseases of Women at the New York Post-Graduate Medical School, and among the other positions he held were those of gynecologist to the New York Post-Graduate Hospital; Consulting Gynecologist to St. John's Riverside Hospital, Yonkers, and Consulting Surgeon to St. Francis' Hospital and to the Nyack Hospital.

RECORD OF MORTALITY

For the Week ending Saturday, August 1, 1908.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	4	1
Chicago	610	261	Waltham	3	1
Philadelphia	473	202	Pittsfield	—	—
St. Louis	—	—	Gloucester	5	1
Baltimore	200	82	Brookline	3	—
Cleveland	—	—	North Adams	3	1
Buffalo	—	—	Chicopee	11	7
Pittsburg	—	—	Northampton	12	3
Cincinnati	—	—	Medford	3	2
Milwaukee	—	—	Beverly	7	2
Washington	—	—	Leominster	2	—
Providence	—	—	Hyde Park	4	1
Boston	218	102	Melrose	4	0
Worcester	37	14	Newburyport	—	—
Fall River	39	27	Woburn	2	1
Cambridge	22	9	Westfield	8	2
Lowell	39	20	Marlboro	1	0
Lynn	28	10	Revere	4	2
New Bedford	38	13	Attleboro	6	3
Springfield	23	9	Peabody	—	—
Lawrence	19	8	Adams	—	—
Somerville	9	3	Clinton	1	0
Brockton	14	8	Gardner	1	—
Holyoke	31	16	Milford	—	—
Malden	7	4	Watertown	5	2
Chelsea	5	1	Plymouth	—	—
Newton	6	5	Weymouth	4	1
Salem	8	5	Framingham	—	—
Haverhill	14	4	Southbridge	4	1
Fitchburg	11	7	Wakefield	—	—
Everett	7	2	Webster	—	—
Taunton	9	4	Arlington	1	—

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING AUGUST 8, 1908.

D. N. Carpenter, surgeon. Detached from the Naval Station, Cavite, P. I., and ordered home to wait orders. July 31.

L. Morris, surgeon. Detached from the Naval Torpedo Station, Newport, R. I., and ordered to the Naval Station, Cavite, P. I., sailing from San Francisco, Cal., about September 5.

A. E. Peck, passed assistant surgeon. Ordered to the Naval Torpedo Station, Newport, R. I.

J. M. Minter, assistant surgeon. Ordered to the Naval Recruiting Station, Cincinnati, Ohio, when discharged from treatment at the Naval Hospital, Mare Island, Cal.

H. R. Hermesch, assistant surgeon. Detached from the Naval Recruiting Station, Cincinnati, Ohio, and ordered to the "California."

W. G. Farwell, passed assistant surgeon. Detached from duty at Camp Ellicott, Isthmus of Panama, and ordered to the Naval Recruiting Station, Philadelphia, Pa. Aug. 3.

W. L. Mann, Jr., acting assistant surgeon. Ordered to the Naval Hospital, Newport, R. I.

J. F. Urie, surgeon. Placed on the retired list from Aug. 1, 1908, in accordance with Section 1453, Revised Statutes. Aug. 6.

RECENT DEATHS.

Dr. Elias Joseph Marsh, of Paterson, N. J., died on Aug. 3, in the seventy-fourth year of his age. He was graduated from the College of Physicians and Surgeons, New York, in 1858, and at the time of his death was consulting surgeon to the Paterson General Hospital.

Dr. John H. Shotwell, a retired physician, and also a minister of the Society of Friends, died at his home at Asbury Park, N. J., on Aug. 4, aged eighty years.

BOOKS AND PAMPHLETS RECEIVED.

Friedberger & Fröhner's Veterinary Pathology. Translated by M. H. Hayes, F.R.C.V.S. With Notes on Bacteriology by Prof. R. Tanner Hewlett, M.D., F.R.C.P., M.R.C.S., D.P.H. Sixth edition, revised and enlarged. Vols. I and II. London: Hurst & Blackett, Ltd. Chicago: W. T. Keener & Co. 1908.

Diseases of Infancy and Children. Their Dietetic, Hygienic and Medical Treatment. By Louis Fischer, M.D. Second edition. Illustrated. Philadelphia: F. A. Davis Co. 1908.

Pulmonary Tuberculosis and Its Complications. With Special Reference to Diagnosis and Treatment. By Sherman G. Bonney, A.M., M.D. Illustrated. Philadelphia and London: W. B. Saunders Co. 1908.

Pain. Its Causation and Diagnostic Significance in Internal Diseases. By Dr. Rudolph Schmidt. Translated and edited by Karl M. Vogel, M.D., and Hans Zinsser, A.M., M.D. Philadelphia and London: J. P. Lippincott Co. 1908.

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Address.

THE SURGICAL RIGHTS OF THE PUBLIC.*

BY JOHN C. MUNRO, M.D., BOSTON,
Surgeon-in-Chief, Carney Hospital.

In accepting the courteous invitation to address your association to-day, I realize deeply the compliment that you bestow not only upon myself, but upon the great number of American surgeons that are your friends and neighbors. A political boundary divides your people from my people, but in our profession there is no dividing line, for the medical and surgical property of one people is, or ought to be, that of the other. The customs and the methods of education of the Canadian differ in minor details from those of my own countrymen, but there are grievances, slight wrongs and evil tendencies that crop up equally in both our peoples, and it is to call your attention to and to enlist your sympathy in some of these that I venture to express the results of observations extending over a period of twenty years.

While listening some time ago to an interesting address by Professor Müller, of Munich, on the German system of insurance of the laboring classes against sickness and death, I was impressed by the fact that the insurance was established not as a charity, but because the poor have the right to be protected against the various accidents and illnesses incident to our complex modern life. At that time it occurred to me that against unnecessary suffering, disease and death, the public, both rich and poor, has an equal right to be protected by means other than that of insurance. In other words, if modern surgery can lengthen life, can protect against malignancy, can nullify suffering better than can be accomplished by other therapeutic measures, the public has the right to know accurately when and to what extent this is possible.

It is not assumed for an instant that protection and alleviation in the case of many diseases cannot be obtained by means that are not surgical. We have merely to witness the results of vaccination, serum inoculation in diphtheria and a host of similar remedies. As a matter of fact, it is interesting to note that the public has practically asserted its right to be protected against smallpox, diphtheria, malaria, yellow fever and other well-known diseases.

During the extraordinary surgical advances that have been made in the last decade, our profession has been so busily engrossed in grasping the new developments that come crowding one upon another, that it has rather lost sight of the poor public and its right to a share in the general progress. We have been inclined to let the people discover for themselves the immense amount of time, money and suffering that can be saved to them, and yet we are in the position of placing before them a host of well-established facts on which we base our advice as regards surgical treatment. More and more have surgery and medicine grown to be scientific and accurate. To a greater and greater extent can surgeons promise definite results. The changes in technic and operative principles that are constantly taking place lead steadily to better results because they tend ever to greater simplicity.

Is it not a good time to stop and view ourselves from the standpoint of the lay public, a public that in the main is intelligent, progressive and full of common sense?

However much we may deplore the fact that surgery is necessary, that it may be an opprobrium, which I doubt very much, we must be willing to admit that, given ideal conditions, enormous temporary and permanent benefit can in numerous instances be vouchsafed by operations and by operations alone. Surgery has its own field. It readily yields to other and simpler therapeutic measures when satisfied that it itself is without avail. At the same time, it is keenly alert to invade the vast field of internal medicine when the latter fails to accomplish the ideal, ready to retire at once if some new discovery demonstrates that disease can be conquered by means other than surgical. What surgeon is there who would not gladly throw down the knife if a serum or any simple remedy were discovered that would definitely cure malignant disease? Some such remedy is bound to come in the course of time, slowly it may be, but none the less surely. In the meantime innumerable types of disease are safely and happily treated by the mechanics of surgery, and it ill becomes us as surgeons to belittle the aid that we can give, for the mere reason that at some future time surgery may become obsolete.

Every year I am told that we have attained the highest limit in technic. This is far from the truth, because hardly a week passes without a surgeon somewhere in the world demonstrating a discovery or reviving some long-forgotten fact that reduces mortality, shortens convalescence or aids in the restoration of normal functions.

It should be made clear at the outset that the public must expect of surgeons not absolute efficiency, but a reasonable degree of it. Such a degree can be acquired by any surgeon who has aptitude, a love for constant self-improvement and a readiness to make sacrifices to his ideals. Of this type there are many in your country as well as mine. The masters of surgery, on the other hand, are few in number. It is to them that we of the rank and file must look for the instruction and inspiration which should constitute a large and by no means unimportant part of their work. It is only a relatively small proportion of the people that can have the direct benefit of their skill. To their teachings the medical as well as the surgical practitioner must listen, and in the light of the accomplishments of the advanced surgical clinics of the world it is not an exaggeration to assert that diagnoses, especially of abdominal and cerebral diseases, are more accurately made by the surgeon or by his medical *confrère* who follows his own cases to the operating table than by the internist who limits his observations to laboratory, personal and post-mortem examinations. The failure of the public to realize this fact accounts in great measure for the many sometime curable diseases that are brought to the surgeon after they have reached the incurable stage. The co-operation of the internist and the surgeon in all cases potentially surgical is something that can be demanded consistently by the people. Each one is a healthy check on the other; their combined judgment is safest for the patient.

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* Address in surgery, Canadian Medical Association, June 10, 1908.

With the emergency operations and the problems suddenly forced upon the doctor far from surgical centers this paper has nothing to do. Every surgeon admires and respects the men who meet the difficult problems of this kind alone, ingeniously and fearlessly. The history of medicine is full of heroes of this class, and no one has greater appreciation of their work than the active surgeon in the large city.

I would deal here rather with the question of elective major surgery as attempted in our large and small surgical centers by men without surgical skill or training, by amateurs and by the nondescript commercial type of doctor that operates for the fee and not for the benefit of the patient.

The internist and the family doctor, assuming that he is a general practitioner, cannot keep pace with the constant advance made along surgical lines. It is physically impossible for him to keep in touch with the best surgical literature and progress. If, therefore, a patient comes for advice concerning a disease that theoretically or practically can be classed as surgical, the patient has a right to the opinion of a practical surgeon, for or against intervention. This applies not only to the commoner diseases like gallstones, appendicitis, cancer, etc., but to the less common border line diseases in which both medical and surgical treatment is of value. The internist, prejudiced at the start against surgery, or slow to follow the best advances in the world's clinics, may presume to decide a question that is or ought to be purely surgical. Such a decision may be as much beyond his province as it would be were a surgeon to attempt to decide as to the nature of an anemia without a blood examination. This breach of faith with the public, for it can hardly be called anything else, is, in my experience, one of the most common factors that leads eventually to incomplete operative success. The public, slow to grasp the full significance of such conditions, is, nevertheless, gradually awakening to its rights in this respect. The remedy is simple. No doctor need be so narrow or prejudiced that he cannot seek counsel in doubtful cases. To ask for surgical advice does not imply any necessity for accepting its verdict. That lies with the patient. Let him be given the facts according to the best modern lights and the decision will rest with him whether to accept an operative risk or not.

Worse than this is the hesitation, narrowness or ignorance, call it what you will, that allows the internist to deal with a surgical lesion until forced to advise surgery, not as a preventive or as a curative measure, but as a last resort. Every experienced surgeon will agree with me that with all his so-called boldness in operating he has never had the courage to assume the responsibilities endangering the lives of his patients that the indifferent or ignorant practitioner assumes at times in advising against surgical intervention or in withholding operative relief. The surgeon with his knife in the presence of appendicitis, gallstones, cancer of the stomach or intestines, empyema and a host of similar diseases is the embodiment of conservatism when compared with the practitioner who elects to treat such diseases medically.

After a patient has decided upon operative treatment he has the right to demand, first of all, asepsis, proper anesthesia and intelligent aftercare. He should realize, however, that although absolute asepsis is the ideal to which all surgeons aspire, practical asepsis alone can be guaranteed in the light of our knowledge at the present time. We should teach the public that the highest degree of asepsis is best attained by a permanent corps of surgical workers trained under responsible heads; that a properly equipped hospital with such trained assistants entails less risk to the patient than the haphazard equipment of the private house or the irresponsible régime of many of the private hospitals which are open indiscriminately to operators, each with his own methods of operative technic.

I think it can be safely said, indeed, that a morning's work at a private hospital with its multifarious and changing authorities is rarely carried through without many lapses in asepsis, for the most part harmless, but occasionally calamitous in result.

Breaks in asepsis are the result of some sin of omission or commission on the part of the operating staff, including the surgeon, his assistants and operation nurses. Too often is the blame for septic calamities ascribed to the sponges, the suture material or the dressings. That any one of these may be at fault is possible, but in the well-conducted operating room proper examinations and control of the material should prevent such accidents save in very rare instances. Too many times have I seen a sterile catgut blamed for the result of a slovenly, dirty surgeon or assistant. So long as surgery is an art and not a mechanical trade, lapses in asepsis are occasionally bound to occur even in the best clinics in spite of all reasonable precautions. The important point for the surgeon, and for the public as well, is to recognize and make use of the means best fitted to reduce these chances to a minimum. We must all recognize that there is some risk attending any and every operation, a risk that often is so small that it may be practically disregarded. Under the immeasurably diverse conditions of heritage, environment and physical and mental defects it is out of the question to allow for every possible accident, and this fact the patient as well as the surgeon must recognize where an operation is undertaken. Provided the surgeon uses precautions that are reasonable in the light of modern scientific knowledge, he can be assured that he has done all that should be expected of him. The patient on his side must be willing to take certain chances provided the result sought by operation is going to lessen the sufferings and dangers that are inherent in the existing lesion or disease.

The public should realize that the dangers, immediate and remote, from anesthesia are very small. Such dangers do exist, however, and it is the surgeon's duty to minimize them in every possible way. A skilled anesthetist, preferably a permanent member of the surgical corps, will cause far less damage than the student or the friendly family practitioner who etherizes occasionally and who is more interested in the operation than in giving the anesthetic. In my own experience the worst and most dangerous etherizers are the unskilled pupil house officers. To the credit of certain individuals of this class, however, it must be said that after a month's training some of them develop into first-class anesthetists, generally at about the time they are ready to graduate to a higher grade. These show their ability early and exhibit, as it were, an inborn talent in this line; others never learn to be satisfactory etherizers, no matter what or how long their experience.

Another class that rivals the student in dangerous etherizing is the graduate with long experience in general practice. He rarely gives ether safely or in a way that aids the operator. His experience has been won mainly at the bedside of the lying-in patient, and in anesthetizing a patient for a major surgical operation he applies methods similar to those which he uses in his obstetrical work.

An unskilled etherizer will make certain of the difficult operations impossible, he will prolong beyond safety an operation that should be short and he will increase in any case the chances of a post-operative pneumonia. These facts are not generally known by the laity, but that does not warrant neglect on the surgeon's part in this particular. The public has just as much right to demand a skilled anesthetist as to demand a skilled surgeon.

Much the same could be said of the unskilled assistant, the ever-changing house surgeon and the general practitioner who assists in major operations at rare intervals. It is difficult for the latter to realize the essential points in aseptic technic; not being accustomed to the ways of the surgeon, he modestly hesitates to give what assistance he would like to give, and often being ignorant of the consecutive steps of an operation, he delays and hampers the surgeon to a degree that he little realizes. I believe that every surgeon who has had much experience in this line will confess that in not a few cases he has been obliged to substitute a partial or a less difficult operation because he was unwilling to expose his patient to the added risks that would come with the unskilled helper.

As soon as the public appreciates that the after-care of major surgical cases, especially of those in which the abdomen has been opened, is just as important as the operation itself, it will insist that the immediate convalescence be guided by the surgeon himself or his capable assistant. To operate from choice in a serious case far away in the country, placing the responsibility of the after-care upon the family doctor, who at the same time is in charge of patients with all types of disease, is unjust to the doctor and to the patient and it leaves a loophole for divided responsibility in case of calamity. No surgeon can safely outline the treatment of any abdominal case if he allows for the innumerable contingencies that he knows to be possible. If every patient passed through the stage of convalescence in a routine way, the problem would be easy, but as a matter of fact, such is far from the truth.

Another demand that the public can and should insist upon with the surgeon that is attached to a public hospital is that any and every major operation, especially if it involves the abdomen, should be performed by the surgeon himself or under his direct supervision. He is appointed to the hospital staff presumably for his special surgical fitness. His position presupposes long training in anatomy, pathology and assistance at surgical operations. The public seeks the services of a hospital because of the skill of its staff, and it has the right to demand that the full responsibility of all major operations should be taken directly by the staff. In order to attract students, to become popular or to shirk labor, the surgeons of many hospitals delegate more or less operative work to immature and irresponsible house-pupils; because of this the public suffers. Many times have I seen a young, inexperienced house surgeon struggling with some difficult problem at the operating table, a problem that has arisen suddenly and unexpectedly, and I have wondered if the complacent surgeon who has deserted his post would be willing to subject one of his own family to this amateur surgery. Much in the way of minor surgery can be properly delegated to one's assistants, but to place the responsibility that attends major operations upon a young surgeon with the experience of a few months is fundamentally wrong, while occasionally it is criminal.

Granting the fact that a hospital staff is or should be selected because of its capability both collectively and individually, it behooves those of us who are responsible for the selection of our coworkers to be both catholic and discriminating in our choosings. We must acknowledge that it is through the work and enthusiasm of the individual that surgical progress is maintained, and if we are to exact the respect of the public for our hospitals, each individual member of the staff must in some one or more respects live up to the highest surgical standard, while at the same time his general qualifications are those of the broad general surgeon. This significance of the individual was aptly expressed as follows at a dinner recently given to Cardinal Logue: "The potency of the individual is greater and nobler than the influence of class or organization or even institution." To no type of man does this apply better than to the surgeons of our large hospitals. How frequently do we see the progress and advancement of the entire institution depend on the activity, breadth and scientific enthusiasm of a few, often against or in spite of the narrow opposition of the many.

To some extent the criticism as regards the house pupil pertains to the amateur surgeon who operates now and then for the excitement or for the fee without pretending to be reasonably skilled in technic or reasonably posted in surgical progress. The smaller hospitals that are luxuriantly cropping up throughout the country are in this respect not only capable of doing much harm, but they are actually guilty thereof. The large and promiscuous staffs in control of these hospitals always include a few ambitious men eager to attempt surgery beyond their ability. The term of service of the staff, constantly shifting, allows but a limited experience to any one member and divides the interest and responsibility of the staff as a whole. It would be far better, as I pointed out some years ago, if such a hospital should select two of its younger members to train themselves for the necessary surgical work by acquiring thorough anatomical, pathological and technical foundations, and should compel them to keep in line with modern surgical advance year in and year out. Two well-trained men of this sort should be able to take proper care of the surgery of a large district and take care of it well, whereas at present much of the work is badly done by innumerable half-trained general practitioners, who, while doing the best that they can, are not giving the public what it has the right to demand..

This would also do away to a great extent with the present system of calling upon the consulting surgeon from the large centers, who only too often operates hurriedly, and on insufficient examination and knowledge of the patient, because he relies upon the data furnished by the family physician. In other words, too many major operations are done under these circumstances without satisfactory study of the patient and his disease, and the after-care is delegated to practitioners without the surgical training and experience that the public can justly demand. This system trains the consulting surgeon into hasty and snap diagnoses, and he necessarily gambles now and then on the chance that he can pull out of a difficult situation if he happens to be caught. But what of the patient under these circumstances? He rarely loses his life, to be sure, but I believe that any experienced surgeon will agree with me that at times an operation is not complete or satisfactory, or that a secondary operation is required later because of the insufficient data, the inadequate assistance or the imperfect operating-room equipment.

That the small hospital is invaluable to the town in which it is situated no one can deny, but under the conditions under which most of these hospitals are conducted at the present time that an institution should undertake, except in case of necessity, the serious surgical problems, I believe to be ill judged at least. It is only a question of time before surgeons will demand that no doctor assume the responsibilities of major surgery without required special courses of training and apprenticeship. If surgeons do not demand it, the public will.

Furthermore, a patient who supports himself and family by his daily wage should insist that he be kept in the hospital for as short a time as possible consistent with good surgery. He should not be allowed to lie around the ward waiting for the surgeon, engrossed in outside affairs or indifferent to his responsibilities, to make up his mind to operate. Neither should he be kept for an undue length of time for the purpose of teaching students. In the large clinics a decision for or against operation can be made within forty-eight hours in most cases. The necessity imposed upon the surgeon of earning his living away from his charity clinic is responsible for much of this form of neglect, and the blame, therefore, really rests on the public itself, badly educated in such matters and encouraged by an indifferent profession.

Could our hospital trustees but see the wisdom of encouraging the surgeon to earn his living in the same building in which he devotes so much time to the pauper sick, both classes of patients would be benefited. This fact is so obvious to any one who has carefully considered the subject that it is unnecessary to enlarge upon it here.

The public has certain rights in the question of surgical fees. The surgeon has equal rights, but he seldom obtains them. To take up the abuse of medical charity would lead me too far from my subject; that such an abuse exists, especially in the eastern part of the States, is too flagrantly evident to need any confirmation here. To some extent the existence of this abuse is responsible for the overcharges to which surgeons are occasionally driven. All patients except paupers and some wage earners should be compelled to pay a fee for medical and surgical care commensurate with their earning capacity just as they are obliged to pay for their provisions, their luxuries or their dissipations. The wealthy should pay liberally for major operations; they should not be robbed. The self-respecting wage earner, whether on daily wages, a salary or in independent business, should not be treated as a pauper. He should be compelled to pay some fee in proportion to his earnings, the number dependent on his income, etc. The public has abused over and over again the medical charity that flourishes to such a degree in our large cities. May it not be because of this abuse that the struggling surgeon is guilty at times of squeezing all that he can from his wealthy client? Our practices need reforming without doubt, but the abuse in this respect is infinitely less than that practiced by the public which is competent to pay.

That surgeons divide fees with the family doctor bringing them surgical cases is a well-recognized evil. Fortunately it exists to a much smaller extent in the East than in the West. That it is fundamentally wrong and pernicious goes without saying. It is based on commercialism alone. As soon as the public realizes that it is deliberately sold by its family doctor, in whom it has full confidence, to the surgeon that allows the largest graft, and that it is not sent to the surgeon best equipped for taking charge of the case, the public itself will stop the practice at once and emphatically. It seems inconsistent with American character that a patient should be bartered voluntarily.

To enter upon the relation of animal experimentation as applied to the development of surgery is very tempting. Its bearing on the principles of surgery and on surgical technic is of tremendons import so far as the great mass of the people is concerned. The latter has learned to trust in the unselfish honesty of the medical profession, and the responsibility is far more serious than the antivivisectionists can realize if humane surgical advance is checked by the indiscriminating and narrow bigotry of ignorant partisans. I believe that if a deliberate and thoughtful expression of views of the practical surgeons of the world were taken to-day, an overwhelming majority would gratefully acknowledge its obligations to animal experimentation as instanced in the daily relief of suffering and prevention of disease. It is almost pathetically comical that we should be confronted time and again by the ignorant and probably thoughtless view of two defunct and famous surgeons upon this subject. Both men lived at the very dawn of modern scientific surgery, neither was young enough to grasp the significance of the new surgical discoveries, while each one had been a too dominating power in certain narrow lines of surgical advance to be willing to accept the broader teachings of others. One directed his genius to mechanical problems; the other demonstrated advancement by means of human experimentation, all of which had to be worked out at a later period by laborious scientific research. The thoughtless and possibly hasty views of these men have been hurled at the thousands of modern surgeons by the opponents to animal experimentation, but I am confident that if Bigelow and Tait were alive to-day, their dominating geniuses and grasp of the truth would enroll them as most enthusiastic and powerful allies in the struggle against the antivivisectionists. The layman, as a potential surgical patient, is more keenly interested in this controversy than he realizes. When the surgical thunderbolt strikes him or his family, he wants and demands as his right the use of every nicety that will diminish risk and lead to recovery. I know and you know as practical surgeons that we daily use the results of laboratory research and that if we were deprived of all that has been handed down to us as the result of animal experimentation, our surgery would lapse back to a degree frightful to contemplate. This is the side that the layman must seriously consider when he is urged to oppose the profession that has always worked and struggled on behalf of suffering mankind and that will fight for the principle of animal experimentation because it knows it is just, humane and merciful.

There is one more protest that may be made in behalf of the public. We hear much loose talk about the direful nervous shock that follows operation, and the public is well trained to expect a long and tedious convalescence on that score. With certain ill-balanced, badly trained people this may be the case, especially if the patients are cared for by over-fussy or unscrupulous physicians, but as a general rule in my experience the post-operative effects are grossly exaggerated. Most patients can be trained out of such calamities as easily as they can be trained into them. With all the traumatic neuroses that have cropped up since suits for personal damages have become so frequent, it is incumbent on our profession to avoid augmenting this class of patients by ill-timed and ill-judged encouragement. In my own experience the patients that suffer most from post-operative neuroses are those that were allowed to become septic by culpable delay in submitting to operation. The bad result can be traced to the sepsis and not to the operation. The contrast is so marked in what might be termed control operations in non-septic cases that one who has observed it readily recognizes the difference. When we consider that a generation ago most operations and accidents were serious because of the septic complications, it is not difficult to understand why the laity at the present time has such a dread of anything associated with surgery. It can be stated conservatively that the lay public is about a generation behind in its realization of the advances accomplished in the science and art of surgery. I believe that I am not unduly severe if I accuse our medical brethren of being about five years behind.

Criticism and censure of existing conditions is not a difficult task. Of one, however, who condemns so freely you have the right to demand some suggestions for reform or reconstruction. In a short general address like this I can enter upon this phase only to a superficial extent.

Fundamentally the great and important factor in remedying many of the evils to which I have called attention is a higher, uniform standard of general and medical education. This, in the States, is being pushed forward most ably and energetically by the Council on Medical Education of the American Medical Association, and we all owe our most loyal fealty to its endeavors. In addition to this general groundwork, I believe that so far as the making of surgeons is concerned, who shall be entitled to stand before the public as capable of dealing with the larger problems of surgery, much can be done even at the present time in the way of special training and special licensing. With regard to the latter, it may be best to adopt some form of approval by a recognized examining board somewhat similar to that which obtains in England. Thus a candidate for the position of surgeonship in a responsible hospital or in a rural community would be obliged to prove his fitness for the work, his knowledge of anatomy, pathology and the science and technic of surgery.

A reform in the construction of our hospital staffs I believe to be equally important. Some such system as that in vogue in Germany should be adopted by our hospitals in the larger cities where there is opportunity for teaching. As constituted at present, many of our public hospitals are overweighted by cumbersome surgical staffs that could easily be reduced to a third or a sixth of their present number. A chief of staff should be placed in full control of fifty to one hundred beds. If in charge of a larger number, his assistants or colleagues should be as capable of assuming full control as the chief himself. The latter should be allowed very great power in the selection of his assistants from among those who have demonstrated their fitness and ability while in subordinate positions. Thus permanent or temporary vacancies would be properly filled and responsible positions in distant hospitals would be open as prizes to tried, capable candidates. This would do away with the present system of graded rank which, however efficient it may be in the army or in the commercial world, is poorly adapted to the profession of surgery and to surgical hospitals. Because a surgeon has performed his work regularly and perfunctorily while in a subordinate position, without advancing himself or his art, is no reason that he should be elevated to the head of a division when a vacancy occurs. As a result of this misapplication of civil service rules, one such chief of service can and will block the progress of his division in a way little realized by the general public or even by the practicing physician. Let every man aspiring to become a chief of staff make good; do not hand him a gift with so great responsibilities just because he happens to be older than his colleagues. Have we not all seen certain surgeons originally appointed by political favor nearly paralyze the active service of a large hospital when placed in a position of responsibility? Has such a man the right to trade on his assumed ability at the expense of a public which cannot easily comprehend the exact state of affairs?

The same principle which applies to the visiting staff of a hospital applies to the student assistants. As I have indicated elsewhere, uniformity and permanency in the operating and ward staff is of the utmost importance in obtaining uniform and satisfactory surgical results. The routine, inexpert work in the wards, the laboratory and the operating room should be done by students, delegated by the schools and accepted without competitive examinations because such work should be a part of the student's curriculum. For more responsible positions the selection should be by a process of elimination, dependent on the demonstrated ability and aptitude of the student assistants. The highest positions should be allotted for a term of years to selected candidates who are planning to enter upon a surgical career. These should be salaried and they should be encouraged or compelled to undertake original work. When at last these men are graduated from their assistance-ships they will be in a position to offer themselves as candidates for junior positions on the staff or they may emigrate to the smaller cities or towns, where they will be entitled to undertake the surgery of their district, building up a surgical nucleus that is capable of developing indefinitely, varying only with the ability of the individual surgeon. To elaborate this scheme is unnecessary. It is essentially that which exists in Germany. When we consider the splendid surgery that the Americans have shown themselves capable of developing in the face of our clumsy and restraining systems, one grows enthusiastic at the possibilities that lie before us, provided we could develop the art along better, safer and more liberal lines.

In dealing with the private hospital problem I can easily be misinterpreted, but I believe that much can be accomplished by which the public will be dealt with more fairly. It seems only right that the well-to-do patient should be treated as carefully and as efficiently as the pauper, but such is far from the fact in some of our large centers. Many of our private hospitals are run as money-making schemes. It is a great temptation to keep a patient in the hospital longer than necessary. It is easy to encourage the neurasthenic to waste weeks in an institution when we know that he or she would be far better off in the woods or at work. Without responsible residents in these hospitals, emergencies endangering the life of the patient arise occasionally that cannot be dealt with properly. The same holds true, as I remarked earlier, with regard to the operating-room equipment. If we are to have private hospitals, the administration can and should be brought as near to that which exists in our best public hospitals as is possible, and until that is attained we are not dealing quite squarely with our patients from whom we derive our incomes.

To kill the growing tendency towards a division of fees it is necessary to keep the public informed as to the facts. Whether this should be done through our local or national societies is not yet clear, but I believe that it is best undertaken by the larger body of men. A curious and annoying type of graft that is not infrequently worked upon the surgeons is that in which the family physician, who presumably knows the financial status of his patient, makes one price for operation to the patient and another, much smaller price, to the surgeon. To expose this it is necessary that the surgeon have his business dealings directly with the patient, thereby losing, of course, all future work that might otherwise come to him from the family doctor whom he has exposed. The public has the right to know how much it pays for surgical care and to whom the amount is paid. The moment we begin to juggle with it in this respect we lose the right to pose as a profession, the first object of which is not to make money.

In conclusion, I would not have you infer that there is no other side to surgery than that of criticism and fault-finding. No profession is without flaws. Every profession reaches a higher plane with each decade, and it is mainly by the elimination of the petty obstacles that our profession is destined to attain a level that can never be reached by others.

As a matter of fact, the public can feel that, taking American surgery as a whole, both that done by the masters and that done by the rank and file scattered over the length and breadth of this continent, there is no surgery in the world more intelligent, more skillful and more considerate of the rights and feelings of the patient. The rate of advance is almost phenomenal. We in the States are wont to boast of our commercial progress, which is apparent to everybody. Few beyond those working in hospitals, laboratories and medical libraries realize that the advance in our profession is parallel with that in our commerce. The advance in the one, however, is for the most part financial and scientific as applied to finance, while the advance in the other is scientific, humane, educational and life-saving.

A significant quality that belongs to our profession is the generosity of the surgeons of one locality towards those of another in freely giving and receiving the good things that spring up in our art. It is a most refreshing sign of broad culture and it does much to destroy the petty jealousies that are a heritage of past generations.

More and more do we see the internist and the surgeon working side by side, more and more do they appeal to the authority of the laboratory, and finally, with all the petty bickerings and inconsistencies that are to some extent inevitable in all professions, any one of us, when his name is called in the ranks of the American surgeon, should be proud to answer "*adsum.*"

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Original Articles.

HIGH-FREQUENCY ELECTRICITY IN THE TREATMENT OF CARDIAC DISEASE.*

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The title of this paper might more properly be the effect of high-frequency electricity on the circulation, for the forms of heart disease which I have studied in this connection have been those in which the blood pressure has entered as an important factor, and it is this class of cases that I believe will be most benefited by this form of treatment.

Such extravagant claims have been made for high-frequency electrical treatment that one hesitates to exhibit his own enthusiasm lest he be judged guilty of approving all that is claimed by its over-enthusiastic advocates. I have yet to be convinced that in it we have a means of regenerating arteriosclerotic blood vessels, or that we have at last discovered the "elixir of youth." But, starting with a very strong skepticism as to its efficiency, I have been convinced that we have in it a distinctly valuable addition to our means of treating the important group of circulatory diseases.

Case I was the first to shake my skepticism in this matter. A female, forty-three years, single, teacher. She came of a family with a well-marked gouty tendency and she had suffered for years from various gouty manifestations. There resulted in the circulation high arterial tension, a moderate amount of arteriosclerosis and an enlarged heart. The urine gave no evidence of disease of the kidneys. At times there was slight mitral regurgitation, but it was generally absent. During the gouty attacks the heart action was sometimes violent and rapid, but more often depressed with slow, weakened action, dyspnea and a feeling of extreme weakness and faintness. When I first saw this patient in 1899 she was having frequent severe attacks of typical angina pectoris with high blood-tension. Nitroglycerin relieved these attacks and has proved the most useful of all drugs in her case. At the times of cardiac depression she can take a very little tincture of strophanthus, 4 to 6 drops two or three times daily for a few doses only. Other medicines of all kinds must be used with the greatest caution and are more apt to do harm than good. Dry heat gives much relief as an application for local pain, but baking of joints could not be endured. The diet was regulated. Free water drinking was urged, but beyond a certain point it caused indigestion. Neither hydrotherapy nor massage could be endured.

She was extremely sensitive to changes in the weather and to cold. During the summer, spent at her old home in Nantucket, she improved a great deal, only to slip back again into her old condition with the advent of cold weather. She required a great deal of medical care. I carefully tried everything that I thought would help and yet she lost a little more ground each successive winter. Finally, about three winters ago, she consented to follow the advice I had frequently urged,—to go South for the cold weather. However, she got caught by a severe attack before she was ready to go and then was unable to travel. I then sent her to a physician for high-frequency treatment, feeling it was a last resort in a desperate situation, and not really expecting any benefit. It helped her so much that when it became too cold for her to go out, an apparatus was installed at her home. This she has learned to use herself. She still has attacks, but only mild ones, and the cardiac symptoms are not serious. We have passed through three winters now, each better than the preceding one. Instead of being called to her with great frequency, I see her only two or three times in a year for general supervision. I may add that we can exclude the menopause or any other factor as contributing to this result except the high-frequency treatment.

Several other cases were treated for me in the following two years and it seemed probable from the results that this treatment lowered the blood pressure and aided metabolism, thus helping toward good elimination. If this were true it would be of very great value in many troubles of the circulation. For the purpose of testing this view I installed at my office last October a high-frequency apparatus of the Tesla-Thompson type. I have usually employed the monopolar method of application, with a vacuum electrode. The intensity has been such as to give a soothing effect, whether applied to local inflammation or for general treatment. By varying the application a marked stimulating effect can be obtained, but this does not enter our present discussion.

At the beginning I found the information about high-frequency treatment very unsatisfactory as to any accurate observations of results. Therefore, in my study of the matter, the effect on the blood pressure has been recorded in nearly all instances in which I have employed this treatment. No attempt to measure the effect on metabolism was made, however, the conditions of office practice making that impracticable with any large number of cases. For the purpose of studying the effect on blood pressure I have made records in all the cases treated by this method for any reason and have not confined the observations solely to circulatory diseases.

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* Read before the American Climatological Association, June 10, 1908.

The blood pressure was taken, in most instances with the patient sitting in a chair, over the brachial artery with the arm bare or with only a thin layer of soft clothing. The broad Janeway cuff was used. Cook's modification of the Riva-Rocci apparatus was employed until the last month or two, when the new form of Rogers' aneroid sphygnomanometer was employed as being more convenient. I have repeatedly compared this instrument with the mercury column and find the variation so slight that it may be disregarded in clinical work. The systolic pressure alone was recorded. The patient was allowed to rest long enough to get over the effects of exertion or excitement before any observations were made. The time of day and relation to meals was usually the same for the same patient, so that these elements may be disregarded.

I have records of the blood pressure in 270 treatments. The blood pressure before treatment ranged from 195 mm. to 90 mm., with an average of 129 mm. The duration of the whole treatment varied from 3 minutes to 30 minutes, with an average of 16 minutes for all cases. The first treatment of a case was usually about 5 minutes, and this was increased according to indications, but in the longer cases observations were made at intervals during the treatment, an observation being made, on the average, after every 5 minutes of treatment. In this way the effect of the treatment on the blood pressure could be closely studied. The general effect of the high-frequency current, as applied, was to reduce the blood pressure. In only 4 of the 270 treatments was it unaffected. In only 6 cases did it rise. It fell to a greater or less extent in 260 cases, or 96%, and the average of this fall was 12 mm. This fall was accomplished by a treatment averaging 11½ minutes. In the table below the results are given in greater detail, the cases being classified according to the height of the blood pressure at the beginning of treatment. It is interesting to note that treatment is most effective in the cases of abnormally high blood pressure, whereas the fall is slight in cases of normal pressure. This is in accordance with observations by French writers.

Table I.

The Fall in Blood Pressure under High-Frequency Treatment.

Height of mercury column before treatment (in mm.).	No. of cases.	Average blood pressure.	Average fall.	No. of minutes in which fall occurred.	Total time of treatment.
Below 100,	10	98	8	19	24
101–120,	98	112	9	12	19
121–140,	87	131	11	10	15
141–160,	57	151	17	12	16
161–180,	16	169	17	10	11
181–200,	2	190	28	10	10
Average in 270 cases,		129	12	11½	16

If the object of treatment is to reduce the blood pressure it is important to follow the blood pressure closely with an accurate instrument. In some cases it rose again after a preliminary fall and might go even as high as at the beginning. This was especially apt to be the case if from continuance of treatment too long, or from the method of application, the skin was much irritated. Under such circumstances, if observations were made only at the beginning and end of treatment, the results would not show a drop in blood pressure nor would we be giving our patients the full benefit of the treatment. In the 20 cases which showed the greatest drop in blood pressure the average fall was 22 mm. in 8 minutes.

I am convinced that by the intelligent application of this remedy, and by watching the blood pressure closely, we can reduce the pressure in almost all cases. The figures show this reduction is greater in the abnormally high cases where such reduction would be most useful.

I am aware that this table contains no extremely high pressures, 195 being the highest, and that I am not warranted by my own experience in talking of the effects on pressures over 200. It happens that such office cases as I have had during this period of study with pressures of 200 or over have been cases of nephritis with good strong cardiac compensation. I have always been slow to interfere with such an adjustment, and I have not as yet used the high-frequency current on these cases, though there are reasons for believing it might be effective and probably beneficial. Such benefit, however, would come in these cases more from the effect on metabolism than on the blood pressure alone, and as yet I have not *proved* that this metabolic effect exists.

Another reason for watching the effect on the blood pressure closely is that occasionally a marked effect occurs in a short time. For example, in one instance the pressure fell 40 mm. (170 to 130) in a treatment of 3 minutes, although in this patient the average of 36 treatments was a fall of 15 mm. in 9 minutes.

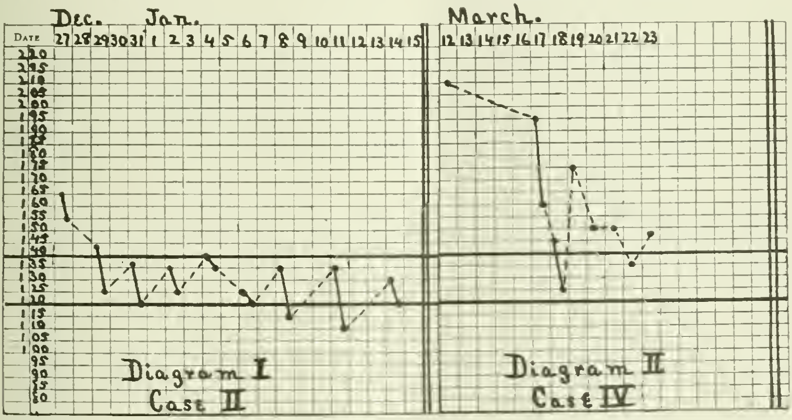
In marked contrast with the effect on the blood pressure is the effect, or lack of effect, on the pulse. The effect on the pulse rate was noted in 293 treatments. Sometimes it increased, sometimes it diminished, sometimes it did both in the course of a treatment. The changes were slight and the general impression was that it remained nearly stationary. In one instance it fell 20 beats or more, and in two instances it rose 20 beats or more. Changes between 10 and 20 beats were: fall, 50 cases; rise, 19 cases. In 221 cases the change in pulse was less than 10 beats. The average change in the 293 treatments was a fall of 2.7 beats.

Such are the results on blood pressure and pulse in all cases observed. Of the instances showing 140 mm. or over, pressures which are of importance in diseases of the circulation, we have 75 treatments in which the average blood pressure was 156, the average fall 17 mm. and the average time 12 minutes.

Roughly stated, in cases of disease of the circulation, with blood pressure ranging from 140 to 200 mm., we may hope by a proper application of high-frequency electricity to reduce the blood pressure 20 mm. by a treatment of 10 minutes. While we cannot guarantee this, I have found fewer and fewer disappointments as my experience has increased.

So far I have laid emphasis on the exact figures of the blood pressure and the amount of fall. I have done this first because exact figures of this sort are lacking in the literature of the subject; and secondly to convince the skeptical that there is something actually accomplished that can be demonstrated by measurements. But I would not be understood that these figures express relatively the amount of benefit derived from the treatment.

In these days of exactness we must still remember that the exact height of abnormal blood pressure is no real measure of the damage that is being done. The important thing to estimate is the relation between the blood pressure and the strength of the heart. A pressure of 200 will not do half the damage to a strong heart that a pressure of 150 will do to a weak one. A lessening of 20 mm. in the pressure, as high-frequency treatments have been shown to do, is a godsend to a struggling heart, especially as it can be secured without the undesirable effects of the vasodilator drugs.



Granting the importance of this point, the next question to arise is, Will it last? These cases are chronic ones. It is of little avail to secure a desirable result in 10 minutes if it is gone again in another 10 minutes. The effect does last long enough to be of practical use in many cases. I can best illustrate this by a few cases that are typical.

Case II. Male, forty-eight, merchant. He has suffered for years from functional disturbances due to poor elimination but has no organic disease. The urine is rather scanty. When concentrated for a long time it shows slight kidney irritation, but after following it for a number of years I feel sure there is no disease of the kidneys. It is a case of the so-called lithemic condition. Attention to diet, the avoidance of alcohol, the free ingestion of fluids, fresh air and exercise have been the chief measures employed. His health has in this way remained good during the golf season, but every winter there has been trouble. Apparently an excess of material of some kind remains in the circulation, gradually accumulating because of imperfect elimination. A series of treatments at some hot-springs has sent him back every time much improved, and hydrotherapy at home has done some good.

In December, 1907, after an attack of influenza, his condition was worse than usual, and in addition to his usual train of symptoms he complained of persistent neuralgic pains in his right arm and shoulder. The high-frequency treatments relieved this pain, improved his general condition, and there resulted essentially the same improvement in health as came before from a course at the Hot Springs.

At the first treatment, Dec. 27, 1907, the blood pressure registered 166 mm. and the pulse was 88. That this is about his regular condition under such circumstances is suggested by the fact that Dr. Hinsdale, at the Hot Springs, Va., on Nov. 7, 1905, found the blood pressure 165 mm. and the pulse 80. The patient had gone there for treatment.

The effect of the first treatment of 8 minutes on Dec. 27, 1907, was to reduce the pressure 12 mm., from 166 to 154. On Dec. 30, he returned with the pressure reduced still lower to 143, which was reduced by a treatment of 10 minutes to 127, a fall of 16 mm. During the following four weeks treatments were given three times a week. The blood pressure was never found over 140. At the beginning of treatment it averaged (in these 12 instances) 132, and on the average fell 11 mm. to 121. In other words, it was kept at the lower normal limits, and at a level that is abnormally low for his age. It remained at the same level with treatments once a week until he started the last of February for a trip South. This time he was in good health and went purely for a vacation. On returning after 6 weeks, the blood pressure at the end of March was only 140 mm. A treatment was given and one week later it was 125. Since then he has been helped by playing golf, and the pressure on May 2 and May 26 was 110 each time.

The prompt lowering of the blood pressure in the cases cited, a marked fall in a very few minutes, suggests an action through the vasomotor system as the most reasonable explanation. On the other hand, the lasting effect of the treatment seems to demand a different explanation. Whatever the immediate effect on the nervous system, we should expect it to be transient, passing away at least in a few hours, and we should then expect a return of the high pressure from the same causes which produced it at first. The fact that this does not occur is strong evidence that the treatment has some beneficial effect on these underlying processes. The further fact that it is so beneficial in cases of faulty metabolism or faulty elimination suggests that it has a powerful effect on the chemical processes of the body.

This inference or hypothesis should, of course, be submitted to experimental investigation before it is finally accepted as a fact, but in the meantime we can best explain the facts of its effects on a large group of cases by assuming that it has an important beneficial effect on the metabolic processes of the body. We are, of course, getting into the region of uncertainty and approaching the realm of speculation. The real nature of electricity is not known. Our knowledge of the manifestations of the high-frequency currents is as yet very imperfect. We are witnessing a shifting of our point of view on such fundamental chemical conceptions as the atomic theory, and what a few years ago would have been considered scientific facts and unfounded speculations are to-day strangely commingled. We seem to be approaching the view that chemical affinity is the same thing as electrical condition, or is closely associated with it, and we are even asking whether the ultimate particles of matter are anything more than units of electric force.

Just to the extent that these ideas are warranted in abstract science, and they are supported by some of our profoundest thinkers, we are warranted in the idea that high-frequency electricity may affect the chemistry of the body. Indeed, the most plausible explanation of this action, to my mind, is that the excessively rapid vibrations, communicated as they are to all parts of the body, have a tendency to loosen the force that tends to preserve the integrity of the molecules, and thus new chemical combinations are made easier. In other words, the high-frequency current has a tendency to promote all metabolic activity in the body. Only on this assumption can I explain its varied beneficial effects.

We have demonstrated its power to lower blood pressure if properly applied, and we have also shown grounds for believing that it has beneficial effect on metabolism. If these things are both true it has a wide field of usefulness in therapeutics, the more valuable because in its effects on metabolism it strikes at the very roots of so much disorder and disease in our modern life. While it can hardly be expected to effect a permanent cure by a short series of treatments, neither will temporary drug treatment nor a course in hydrotherapy produce a permanent cure.

In Case II we saw practically the same improvement from this treatment as had come before from a course of treatment at the Hot Springs, and with the advantage that the patient was able to continue his business without interruption.

Case III offers a comparison of results with a course of treatment at Nauheim. This patient was a woman of fifty-six years with a history of gout in the family history and in her personal history. She came to consult me in April, 1907, with reference to the advisability of going to Nauheim for treatment for heart trouble. She had had well-marked symptoms of cardiac trouble for over four years, and at times had serious attacks. Examination of the heart showed a myocarditis. There was a slight arteriosclerosis and a slight interstitial nephritis. The arterial tension was high. She was advised that the treatment at Nauheim would probably be beneficial. She took this course of treatment during the summer and returned in September very much improved. On her return to her old life this improvement was gradually lost and she returned to me for treatment in the latter part of November, with a gouty swelling of her left thumb and her cardiac condition and general health as bad as it was in April.

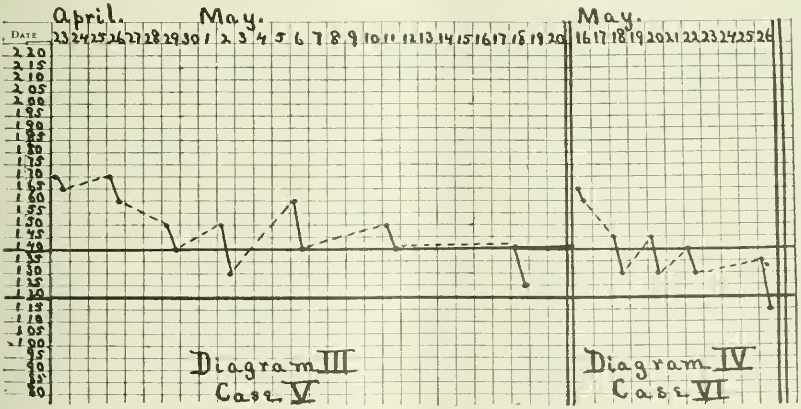
High-frequency treatment was begun Nov. 21, 1907. The blood pressure was 170 mm. Treatments were given for 5 to 8 minutes two or three times a week, and were given mildly in the vicinity of the gouty thumb joint. Relief of this joint began at once. By the fourth treatment the blood pressure at the beginning of treatment had fallen to 150, and it fell to 10 to 20 mm. during each treatment. By the fifth treatment she was so much better that she stayed away for three weeks. After that she had treatment off and on through the winter and spring, usually twice a week. The blood pressure showed a tendency to return to 160 or 170 when not under treatment or if she was careless about her regimen. Under treatment it was found about 140 mm. on the average at the beginning of each treatment and was usually lowered to about 120, and sometimes fell to 110. She passed the best winter she had had for years, was more active than for two or three winters before, and did not find it necessary to go South as she had usually done for a period of two months during the coldest weather. When we remember that two months after her return to America the benefit of the Nauheim treatment had disappeared, it does not seem like claiming too much to say that this treatment was in this case fully as efficient as the Nauheim treatment.

Case IV was a lawyer sixty years old who came to consult me March 12, 1908. Dyspnea of cardiac origin had begun six months before. He had been examined during that period by three physicians, who assured him that he had no heart trouble, that his trouble was temporary and would soon wear away. He had, on March 12, an enlarged (dilated) heart with weak sounds, no cardiac murmurs, moderate arteriosclerosis, slight interstitial nephritis, and a blood pressure of 210 mm. My diagnosis of the cardiac condition was myocarditis, with dilatation resulting from inability of the cardiac muscle to work efficiently against the high blood pressure.

He was given nitroglycerin, gr. 1-100, every three hours, and strychnia and digitalin, gr. 1-100 of each, three times daily. He returned March 17 (after five days) with the blood pressure 195, but with no improvement of symptoms. High-frequency treatment was begun, and after 9 minutes the blood pressure was reduced to 160, a fall of 35 mm. Next day he returned with a blood pressure still lower by 15 mm., or 145, and under treatment it fell to 128, a further fall of 17 mm. In other words, treatment for five days with vasodilators and cardiac tonics had reduced the blood pressure only 15 mm. (210 to 195), whereas, after treatment by high frequency on two successive days, the blood pressure had fallen 67 mm. (195 to 128, a reduction of more than one third). Inasmuch as other conditions had remained essentially the same, it seems reasonable to assume that the high-frequency current had a causal relation to this remarkable drop in pressure.

He felt so much better that he overdid that day and was indiscreet in his lunch. He had indigestion, with cardiac distress, in the afternoon, and had to go home and stay abed for a few days. Soon after getting up again he overdid again on March 25 and that night had a severe attack of acute pulmonary edema.

He was again confined to bed for a few days. During the period of confinement at home there was a tendency for the blood pressure to go up to 175 or higher. By a very simple diet, low in albuminoids, and by securing free action of the bowels, the blood pressure was kept at about 150. After his return to my office for high-frequency treatment on April 17, the pressure was kept even lower. On April 22 he went to business and since May 1 has been in town for business for two or three hours each day. His heart has been reduced more than 2 cm. in transverse diameter and has improved greatly in strength, and he says he feels better than for many months. Nitroglycerin was stopped as soon as the high-frequency current controlled the pressure, and while strychnia and digitalin have aided a good deal toward these results, the chief credit should be given to the high-frequency treatment. Diet, free elimination by the bowel and rest have been contributing factors in the gain.



Case V is a case of interstitial nephritis. A man of forty-six, married, insurance agent. He has an active nervous temperament. At the age of nineteen or twenty he had syphilis and treated for it a number of months. Otherwise he has been in good health except for an attack of pneumonia one year ago, and attacks of neuralgia which have occurred more or less for twenty years. For two years past he has worked very hard and has been nervously tired. For six or eight months the neuralgia has been more frequent and more severe, and he has suffered from insomnia to some extent.

Three years ago he was rejected for life insurance on account of nephritis. He placed himself under the care of a well-known physician of New York, who confirmed the diagnosis and found the blood pressure high. He was placed upon a careful regimen, with regulation of the diet, which he has carefully followed since. This doctor cautioned him as to the danger of impaired action of the heart as a result of the nephritis and high blood tension.

Up to the present time there have been no symptoms of impaired cardiac action, but the physical examination on April 23, 1908, showed the heart enlarged with the left border 3 cm. outside the nipple line. The heart action was strong and no murmurs were present. There was no edema or other signs of passive congestion. An examination of the urine showed the slightest possible trace of albumin and a few hyaline casts with an occasional degenerated renal cell adherent. Excretion by the kidneys was satisfactory. The total evidence in the case warrants a diagnosis of an interstitial nephritis of at least three years' duration and moderately developed. There is moderate arteriosclerosis. The blood pressure was 170 mm.

The usual fall of blood pressure followed the use of the high-frequency current. Treatments have been given once or twice a week and since the second treatment the initial blood pressure has been (with one exception) 140 to 150, with a fall of 10 to 20 mm. as a result of a treatment of 20 minutes. The symptoms have been much improved. He sleeps well, feels stronger and the neuralgic pain is much improved.

Case VI is another case of interstitial nephritis. This man is a dentist, fifty-two years of age, married. He consulted me on May 16, 1908. He complained of nervousness, headache and frequent micturition at night. The twenty-four-hour amount of urine was two quarts. A scarcely detectable amount of albumin and a few hyaline and granular casts were the other important abnormal elements. There was quite marked arteriosclerosis of the radials and temporals. The heart was enlarged to 1 cm. outside the nipple line. Action rapid, no murmurs. The blood pressure was 165 mm.

This patient was a large eater and undoubtedly ate meat in excess, considering the condition of his kidneys. However, in order that the effect of the high-frequency treatment on his case might be more definitely understood, no change in diet was made at first. As a result of treatments twice a week the pressure fell at once to an initial pressure of 140–145, with a fall of 10–15 mm. at each treatment. After ten days he was put on a diet giving about 60 gm. of proteid food in twenty-four hours. The initial pressure fell about 10 mm. more, and about the same fall resulted from each treatment. His symptoms have shown a distinct improvement.

The accompanying diagrams show graphically the early reduction of the blood pressure from an undesirable height to one that is well tolerated. By a continuance of the treatment the pressure may be kept at this lower level. In these diagrams the continuous line represents the fall in blood pressure at each treatment, while the dotted line represents the change between treatments.

Diagram I illustrates Case II, which may be called lithemia for lack of a better term. With the aid of outdoor exercise by playing golf he has maintained the low blood pressure for over three months without treatment.

Diagram 2 illustrates Case IV. This was a case of cardio-renal trouble with high blood pressure, the latter being due in part to poor elimination by kidneys and bowels and probably also to auto-intoxication from the bowels. We see first a slight drop (15 mm.) under drug treatment, then a marked drop (67 mm.) from high-frequency treatment, then a return to 175 on account of indigestion, and finally a further reduction under a low diet and free catharsis.

Diagram 3 illustrates Case V and Diagram 4 illustrates Case VI, both of which are cases of chronic interstitial nephritis. In these two cases we see an effect similar to the other cases.

Table 2 shows the continuance of the beneficial effect of the lowered blood pressure in Case II, even after treatment was stopped.

Table II.

Date.	Interval.	Blood pressure.	
		Initial.	Fall.
Dec. 27,		166	12
,, 30,	3 days	143	16
Jan. 1,	2 ,,	138	18
,, 3,	2 ,,	135	10
,, 5,	2 ,,	140	5
,, 7,	2 ,,	125	10
,, 9,	2 ,,	135	13
,, 11,	2 ,,	135	25
,, 14,	3 ,,	130	10
,, 16,	2 ,,	130	7
,, 18,	2 ,,	125	5
,, 21,	3 ,,	133	10
,, 23,	2 ,,	135	13
,, 25,	2 ,,	125	10
,, 28,	3 ,,	125	10
Feb. 1,	4 ,,	125	5
,, 5,	4 ,,	125	15
,, 12,	7 ,,	125	15
,, 21,	9 ,,	130	10
Mar. 31,	39 ,,	140	25
April 8,	8 ,,	125	15
May 2,	24 ,,	110	10
,, 26,	24 ,,	110	No treatment

SUMMARY.

High-frequency electricity may be so applied as to reduce the blood pressure in almost all cases. The amount of the reduction is greater in proportion to the abnormal height of the pressure, although in this series of cases none have been above 200 mm. The greatest fall in the abnormal blood pressures was 40 mm., and the average fall was 17 mm. after an average treatment of 12 minutes.

There is good reason to believe that there is also a favorable effect on metabolism and that in this way the conditions that cause the high pressures are improved. For this reason the effect of the treatment is not merely temporary but lasts for a considerable time.

This form of treatment will be of special value in cardiac cases where the heart is having difficulty to overcome high blood pressure, especially in those cases where the pressure is due to faulty metabolism or poor elimination. This includes the important class of cardio-renal cases. It will also be useful as an adjunct in the treatment of those cases of high pressure which have not yet developed cardio-renal disease, which are due in part to our strenuous modern competitive life and our excessive ingestion of food.

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SOME BORDER-LINE CASES OF MENTAL DEFICIENCY.*

BY C. C. BECKLEY, M.D., LANCASTER, MASS.

I feel greatly honored by being asked to report to this society some of the border-line cases of mental deficiency which have come under my observation at the Lancaster State Industrial School for Girls.

Some of the cases which I have selected to report have been transferred to the School for the Feeble-Minded at Waverley. Others are still at the Lancaster School. With part of the latter I do not know what it is best to do; they are not suitable cases to be kept at the school, they do not do well if allowed to go out. Should they be sent to the School for the Feeble-Minded, or do they belong in some other institution?

There are three questions which are constantly arising:

First, What is the highest grade of mental deficiency which shall be committed to the School for the Feeble-Minded?

Second, What shall be done with the others, if there are others, who need indefinite custodial care, after they are twenty-one, on account of some mental deficiency, or for other reasons?

Third, What is to be considered a failure in those who are allowed to go out into the world?

From a talk with the Judge of Probate before whom the girls at the Lancaster School have to be taken to be committed to the School for the Feeble-Minded, I understood that he would be willing to act in the following cases:

First, those who, owing to their mental inferiority, are incapable of taking care of their person. Second, those who, owing to their mental inferiority, are dangerous to others, that is, are liable to injure them physically, and those who are destructive to property. Third, those who, owing to their mental inferiority, are incapable of self-direction, provided they have no responsible person to have charge of them outside, including those who are liable to become the prey of vicious men owing to their mental deficiency.

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* Read before the Boston Society of Psychiatry and Neurology, May 28, 1908.

Each case must be acted upon separately, and there must be unmistakable evidence of feeblemindedness. A girl to be committed as feebleminded must be of as low a grade as a boy. A judge is not obliged to commit every feebleminded person brought before him. He goes into each case thoroughly, and if the parents object, he would think it best for the child to be left in their charge provided he considers them responsible and the condition of the home favorable.

A girl as a rule is brought to the Lancaster School between eleven and seventeen years of age. She comes from a poor, ignorant family of foreign extraction, she has been brought up among the worst surroundings, she is in the second, third or possibly the fifth grade in school, she has little knowledge of the rights of others, and has vicious tendencies, her powers of observation and reasoning are limited, she can do very little work and her attention is not held for any length of time. Under the influence of the discipline and instruction which she receives, her mental powers develop more or less rapidly for a time, but sooner or later she seems to have reached the limit of her possibilities, and all further advance ceases. She can now do considerable work, — she can make good bread, can wash and iron well, perhaps she is able to make a simple dress, but it is found that as soon as supervision is withdrawn, her work deteriorates. If put out into a family where she is not under close supervision and strict discipline, her work becomes less satisfactory and she shows lawless tendencies. Mentally she is still below the average but not as low grade as when she came to the school.

There are cases of this kind continually coming under my observation. They come to the school poorly endowed mentally, and what possibilities they may have, have never been given a chance to develop. Some seem to compare favorably with their parents, but their judgment cannot be relied upon and they are easily influenced by others. While at the school they are so protected that it is difficult, if not impossible, to determine how much their morals have improved.

In the reports of the following cases I have copied freely from the records at the office, have used reports from the officers at the different houses and notes taken from my own observation.

Case I. C. U. Born April, 1890, committed August, 1906, as a stubborn child; on admission was found to be pregnant and in a poor physical condition. She was confined the last of December, and the following February was placed out in a family with the child. She was very fond of her child, but could not be trusted to take care of it as she lacked judgment. While out she was secretly married to the hired man employed in the family because she thought her child was going to be taken away from her, and she had been told that if she was married the authorities could not take it. She was returned to the school and since her return she has developed in all ways. She has made herself very useful in the house, especially so in sewing, has charge of the sewing room and has shown herself quite responsible. She is of good disposition, placid, willing and ambitious. From the first she gave evidence of feeble mentality, and although she has improved a great deal, she is still below the average. In her school work she is in third grade.

Case II. K. Q. For the first two or three months she was a desperate case. From the first day of commitment she began a series of sensational maneuvers, noisy in her room, screaming and pounding, quarrelsome with the other girls, would eat only on the sly, would arrange her dress and hair in the most fantastic style and work her face into all sorts of contortions; she was filthy in her room.

Her performances continued for several months, a few days of silence, alternating with boisterousness, followed by great hilarity. She apparently had delusions, would say the girls were choking her; she had an uncontrollable temper, and threatened the lives of other girls on different occasions. As she became more interested in the different enterprises of the school, she gradually subsided and has become more and more normal. She is a splendid worker, especially fond of kitchen work, and has seemed to acquire quite a degree of responsibility; has for months assisted in the kitchen at the hospital, where she has made herself very valuable. She is neat to the last degree, methodical and most of the time good natured, always ready with a quick answer. Has a great love of commendation and is very affectionate. She can read and write intelligently, add and subtract, is ambitious to learn. She is greatly influenced by her surroundings, her face portraying every passing thought, — at times sullen and sad, again bright and alert, ready for anything which may come along.

Case III. G. P. Born April, 1892. Was first taken by the State Board of Charities as an unmanageable child; came to the Lancaster School in April, 1904. Since then has been boarded out and allowed to go home, but in every place was so difficult to get along with no one would keep her; was out late nights, at times all night, and stole repeatedly. At the school has always been unruly and disobedient, at times noisy in her room. After being transferred to another house she behaved very well for six months, could be taught to do most things, could sew well. Last winter she began to give a great deal of trouble; during January she had two marks, in February twenty-four and in March thirty-three. In a talk with the matron of the house, the first of April, she said she had behaved badly because one of the girls told her it was the only way to get out; that if she made trouble enough she would be sent to some other institution from which she would soon be discharged. During April she behaved very well, but May has been a bad month, beginning with a slight attack about the first; this was followed in a few days by one of the worst she has had, that in a short time by a third. At the beginning of an attack she is said to laugh in an unnatural way, pointing her finger at some girl saying, "Bad, bad." Is disagreeable and refuses to mind. The girls are said to recognize that an attack is on, and often try to talk her out of it, but to no effect. She is sent to her room, where she makes considerable noise, breaks and destroys things. At times force has to be used. She twisted the matron's hand so that the wrist was sprained and slapped her in the face during a recent fracas. She is taken to a room in the basement where, after several days solitary confinement, — once refusing all food and drink for days, — she becomes suitable for family life again.

I saw the room after a recent attack — a tin plate torn into strips, a wash basin jammed out of shape, a dress torn into shreds and a heavy wooden crosspiece broken from a bench, the only piece of furniture in the room. The bolt which held one end was also broken. She is said to look and act like an insane person when struggling. She has not had any hallucinations or delusions; she is able to reason, remembers everything that occurs, and can give a reason for acting as she does. Wants to be sent to an insane hospital, to prison or the Feeble-Minded School — anywhere to get out of her present place. Again she wants to make it so disagreeable that the matron will resign. There are no ideas of persecution, although at times she thinks she is punished more severely than the other girls. The priest is reported as saying that she is incorrigible, that he could not get any sense from her. She is mentally below the average, is in the third grade in school work, and likes to play with dolls.

CASE IV. J. W. Born May, 1891. Committed July, 1907, for drunkenness; had been arrested and put on probation three times previous to this. Her associates were immoral. When admitted to the school, she was in a curious condition for two weeks or more, which was thought to be the result of her intemperance. She would cry out as if some one was hurting her, then call for her mother to come and get her. There was considerable muscular twitching. She hardly seemed to realize when spoken to, but persistent questioning would obtain an apparently intelligent answer, which would be given in a quick but sullen manner. She was in an extremely nervous, irritable condition, which still persists, but in a much less marked degree. She still has some choreic twitchings. I cannot determine that there ever were any hallucinations, but she will not talk freely with me. At home she was never made to mind, others did as she wanted. Her chief characteristic is "I won't." She will not do anything that is wanted of her, and she wants to do everything that is not wanted. At times will not eat if she thinks the others want her to. The other girls get her to run away when out by telling her that she must not. She will not do anything except through fear; for a few days at a time they can get along with her comfortably by being extremely careful. She is in the third grade in school work, can write a very good letter, but usually spoils it by putting in some absurd thing. At times makes some very bright remarks. She will not apply herself, and is not useful in the house, enjoys hectoring the other girls, pulled one girl's hair very severely. At best she is a nuisance.

CASE V. H. M. Born January, 1891. Committed to the school July, 1903, for stubbornness, stealing and vicious habits. She had been in charge of the State Board of Charity for some time previous to this. Was first placed out September, 1905. January, 1906, a good report was received from her. She was said to be growing fast and doing well in school work. February, 1907, was returned to the school as unsatisfactory. Oct. 10, 1907, was again placed out. Oct. 30 and Nov. 5, her places were changed; Nov. 12, 1907, she was returned to the school. In the first place she proved to be incompetent, ruining everything she touched. In the second place she was saucy, untruthful and freakish in her likes and dislikes. In the third place she was very low minded, "a regular little animal," talked horribly to an old man in the family, added stealing to her list of misdemeanors.

At the school she did very well for the first few months; since then has caused a great deal of trouble, disagreeable, saucy, ugly, vicious, shiftless, refused to work, pretended for a long time that she could not, threatened to set fire to the buildings. At present she is doing very well. Is classed as being in the seventh grade in school work.

CASE VI. A. C. Born February, 1891. Committed to the school August, 1904, as lewd, wanton and lascivious. Was not considered as under average in intellect. September, 1904, was allowed to go home and marry a man living in the house with her father. April, 1905, is reported as being very happy and trying to save money enough to buy a home. January, 1906, was returned to the school because she would not stay at home, and would not do the housework, out walking the streets until late at night. She is said to have had improper relations with her father and probably with an uncle. It is reported that her father wanted to swap her mother for her with her husband, but I do not know that these statements are true. She is said to have been very uncivilized when she first came to the school. She has improved a great deal and does not give much trouble now, is kind hearted, and as a scrub girl, useful, but needs strict supervision. Has not much idea of right and wrong, both the result of her bringing up and mental deficiency. In school work is in the third grade.

CASE VII. A. S. Born May, 1892. Committed to the school February, 1907, for larceny. Was thought to be pregnant and a place was found for her outside where she behaved very badly; was in three different places. Later it was found that she was not pregnant and she was returned to the school. Two days later the bars and casings to her window were found loose and she was sent to another house. The matron at the latter house reports that there is not a worse girl in the house; that there is not a dirty thing going on but she is in it, that she is so easily influenced, the other girls put her up to do things to bother the officers. She is quiet and sly, is very submissive, nothing will arouse her temper. She is learning to sew very well, can clean house, but is extremely slow. In school work is in the fifth grade. It is thought at present that she could not do enough to earn her own living and that she would become a prey for the first person who came along.

CASE VIII. A. K. Parents died when she was four years old; has been in charge of the state since. Now an intense, shrewd, keen girl of eighteen years. Is in the fifth grade in school work. Is apparently trying to do right and wants to win approval, but has not the patience to do her work well, is in a hurry to get one thing done and begin another. Is strongly attracted by nice and pretty things, which she cannot seem to resist taking; if clothing, she wears part, cuts up and destroys more and perhaps gives away the remaining.

THE HIGH-GRADE MENTAL DEFECTIVES.*

BY W. N. BULLARD, M.D., BOSTON.

As the careful and scientific clinical study of the various dependent classes advances, and as our knowledge increases and becomes more definite, grades and forms of mental development and of mental power can be more clearly distinguished and we can with greater certainty determine the true mental condition of those whom we are called upon to examine and observe. As we approach the higher degrees of mental impairment the difficulties in the classification and grading of the mental capacity or the normality of the brain action becomes enormously increased. By the term "higher degree of mental impairment" we denote those cases in which the defect is least apparent, the so-called border-line cases — those cases which are supposed to stand near or close to the imaginary line which divides the normal from the subnormal or diseased. We shall certainly not in our time be able to measure with absolute accuracy the brain powers of any person. And yet by most careful study and by most ingenious devices we are able to form definite conclusions in regard to many cases which a few years ago were neither properly distinguished nor differentiated. It is very easy even for the layman to perceive that the low-grade idiot is not normal. The ordinary forms of feeble-mindedness and idiocy seen at our clinics are commonly recognizable without difficulty by any physician who has paid attention to this subject. But the higher grades of feeble-mindedness rarely come to the specialist or neurological clinics, and when they come cannot be recognized. The reason for this is obvious. These cases cannot be classified without full mental histories. The physical examination is worthless in this regard. Long mental histories and prolonged observation can alone afford the requisite data. This class of cases can best be studied in connection with some society or institution where detailed histories of the patients for a number of years are available and where there is a certain amount of practiced or trained observation.

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* Read before the Boston Society of Psychiatry and Neurology, May 28, 1908.

One great difficulty in the classification and grading of these cases is that even the experts have not sufficiently realized the inequality of natural and of pathological mental development. The layman has hardly accepted the idea at all, but it is gradually being comprehended that because a child is or is thought to be fond of music, it is not a sign that he is not feeble-minded. But even among the physicians and even among the specialists (the alienists and neurologists) this fact has not received sufficient weight. We know that in ordinary life the brain or the mental powers are not usually developed equally in all directions, but we have not applied this fact with sufficient clearness in our study of the higher grades of mental defect. We are still prone to consider that the child who can get through the school examination, or the adult who can read and write fairly well, is not feeble-minded, and yet there is a large class which can fulfill these tests and yet are not able to care for themselves in the world, are in the true sense of the word feeble-minded, and form perhaps the most dangerous class and certainly the most expensive class to the community.

It is only in a modified way that intellectual ability can be accepted as a satisfactory test for the mental powers. There are other mental qualities which have a large part in the sum of mental characteristics, qualitative and quantitative, which make up the mentality of the normal child.

To mention only a few of these: There is first the moral sense. We have heard but a few weeks ago from Dr. Fernald in relation to this class of cases. Of those under his observation he has been able to satisfy himself that all or nearly all have also definite intellectual defect, while the moral defect is the prominent or predominant symptom. It is my opinion, however, that the greatest caution should be exercised in placing cases in this category.

Secondly, we find a number of persons (girls) who are only slightly weak in power of intellectual acquisition; that is, they can learn a good deal, but they are wholly lacking in practical judgment. They cannot care for themselves in the world because they do not thoroughly comprehend, and on account of mental incapacity cannot be made to comprehend, the ordinary relations of practical things. Their conduct is not regulated and naturally is apt to be bad, not because moral sense is lacking, though this may be also the case, but because they cannot appreciate the bearing of one act upon another and are led irresponsibly they know not where.

Thirdly there is another class whose difficulty seems to be lack of self-control. They are more or less weak intellectually, but this weakness is not their prominent mental symptom. As one meets them casually they seem at first like ordinary persons not very strong intellectually though not really much below par, yet it is soon found that they have no power of resistance. They are led away by any one in any direction and they are unable to care for themselves in the world on account of this mental defect and are naturally drawn to evil.

I must here state very clearly my belief that it is only in carefully observed cases where some definite intellectual defect exists that we are justified in making a diagnosis of mental irresponsibility. I feel strongly the great danger which exists to society in pushing too far the idea of moral insanity in criminals, and I am opposed to its use unless in very exceptional cases. I think that great care also should be used in diagnosticating a case as one of moral imbecility. Yet these latter cases undoubtedly exist and some are very obvious, while others require the most detailed, prolonged and judicial observation before their exact character can be decided. It is only the expert, and the expert in imbecility, not insanity alone, who is fitted to give judgment in these cases.

This applies with equal force to those cases in which lack of self-control or of decision seems to be the predominant factor. To determine whether this lack is really due to defective cerebral development or to lack of early training or to what extent it is due to each of these causes will test to a high degree the judgment and the ability of the expert in imbecility. No expert, however skillful he may be, can make this decision without serious and usually lengthy study of the case. To bring such a case to a physician's office and to expect a decision on the spot shows ignorance of the real inherent difficulties and is not to be countenanced from the standpoint either of the patient or the physician.

I do not think that it will be necessary for me before this society to prove the existence of these classes of high mental defectives of whom I have spoken. Such proof would be only too easy. Case after case can be related and shown in which the existence of this condition has been evident to all the experts who have watched and examined the patient.

Rather is it our aim to discuss what shall be done for this class of patient. I shall consider for the moment only the females, the girls and women, as for evident reasons it is most pressing for them.

Girls of the classes described, whether coming from the state school or elsewhere, must be properly provided for and cared for by the state. The reasons for this are: (1) There is no class of persons in our whole population who, unit for unit, are so dangerous or so expensive to the state; this excepts no class, not even the violently insane. These girls are much more dangerous and expensive than the ordinary insane or the ordinary feeble-minded or the ordinary male criminal.

Why is this? They are dangerous because, being irresponsible wholly or in part, they become the prey of the lower class of vile men and are the most fertile source for the spread of all forms of venereal disease. They have not the sense nor the understanding to avoid disease nor any care as to its spread.

They are most expensive to the state because they are the most fruitful source of diseased and mentally-defective children, who are apt to become state charges. One woman of this class, slightly below par intellectually, but not extremely feeble-minded, can produce incalculable evil. The plainly feeble-minded is more or less obvious and the evil she creates is so plain that it can be and often is guarded against, but with the high-grade imbecile this is not the case. Married or unmarried, they are liable to produce diseased, rotten and defective children.

I could say much more on this subject, but before this audience I am sure it is not needed. I shall simply state again the proposition: The high-grade female mental defective must be provided for by the state and this class should be fully provided for as soon as possible.

How they should be provided for I cannot here discuss. This problem properly comes under the jurisdiction of the state authorities, especially the State Board of Insanity. None realizes better than I do the difficulties in the way of provision for this class. To demand that the state take care of even a moderate number of high-grade female imbeciles through the whole period of their active sexual life, while we admit that these patients are not intellectually essentially improvable, but that they need custodial care, that they are not an easy class to satisfy, and that their relatives and parents, many of whom are themselves either addicted to alcohol or other evil or vice and are of low mental grade, are liable to cause any trouble they can to the institutions receiving them, seems almost as if we were requiring too much. And yet it is not so. Our requirements are moderate and, judicially considered, eminently reasonable. It is but a sign of financial wisdom to pay two dollars now to avoid paying a hundred dollars in a few years. It would be wise without consideration of the financial question to pay well now simply to avoid the public spread of foul disease. There is almost no one who would not wish to stop the spread of smallpox in the community, yet syphilis is much worse on the whole than smallpox.

What can be done with these persons now? A certain number are received at the Massachusetts School for the Feeble-Minded at Waverley. Elsewhere there is at present no place for them.

It is said that we are going to meet with legal difficulties in the commitment of these patients. I do not believe that these will be permanent or fixed. As soon as the judges are sufficiently instructed in the inability of these persons to care for themselves in the world and that this inability is due to mental defect, they will undoubtedly act humanely and reasonably, inasmuch as there is no law to prevent them from so doing.

The descriptive paper now in use for commitment to the State School for the Feeble-Minded at Waverley should be changed. It is totally inadequate and inapplicable to this class of cases. It reads: " (She) is not insane but is so deficient in mental ability that (she) cannot be taught in common schools as others of (her) age are." These high-grade female imbeciles are most of them beyond school age; some of them can be taught, at least partially, as others of their age are, and, thirdly, it is not properly a matter of primary importance in this class whether they can be taught or not. The real question is their mental incapacity, due to mental or cerebral defect, to live an ordinary life in the world as " others of their age " do. This class, *owing to mental defect,* cannot guide or guard itself in ordinary life, and is a menace to the state.

Clinical Department.

REPORT OF A CASE OF DERMOID CYST IN THE CANAL OF NUCK WITH A REVIEW OF THE LITERATURE.*

BY C. O. KEPLER, M.D., BOSTON.

The following case seems to be of sufficient rarity to be worth reporting:

Miss E. R., American, born of German parentage. Twenty-six years of age. Occupation: School-teacher.

Family history. — Negative. No history of tumor in the family.

Past history. — She has had the various diseases of childhood; wore a truss for supposed right inguinal hernia from five to ten years of age, at which time the supposed hernia disappeared and remained so until its reappearance two years ago; otherwise she has always been well. Catamenia began at thirteen years of age, has been regular and practically painless.

Present history. — About two years ago patient had an attack which, from her history, seemed like a typical catarrhal appendicitis with recurrences at more or less regular three months intervals. About the same time as her first attack, two years ago, patient first noticed a swelling in the region of the right inguinal canal. This swelling was somewhat sausage shaped and not painful. Since then the swelling has been getting slowly more prominent and for a year following its appearance it seemed at times to disappear for short intervals. Patient says, however, that for the last year this swelling has seemed to remain constantly in one position. She says that last year, after rowing on a lake, during the summer vacation, she experienced pains in this region which would often radiate up towards the region of the appendix. She says that at times she could not distinguish the pain from the appendix from the pain that seemed to radiate from this swelling. These attacks of pain following such exercises as rowing would often last a week and consist of sharp pains on slight movements of the body, unassociated with fever, nausea or vomiting.

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* Read at a meeting of the Boston Obstetrical Society, April 28, 1908.

Physical examination. — Patient is well developed and well nourished. Temperature and pulse negative. Heart and lungs negative. Abdomen negative except that over McBurney's point was a decided muscular spasm and moderate tenderness.

In the right upper part of the mons veneris, in line of the round ligament, was a smooth, rounded, sausage-shaped mass, somewhat elastic, which seemed capable of being pushed moderately into the inguinal canal and then reappearing. It was only slightly sensitive on pressure.

A diagnosis of chronic catarrhal appendicitis associated with right inguinal hernia was made; an operation was performed in April, 1907. At the operation an incision was made through the right rectus muscle. Inspection of the uterus and its appendages was negative, the right ovary especially being of normal character and not adherent. A typical catarrhal appendicitis with adhesions was found and treated in the usual way. No evidence of prolapse of the gut through the abdominal wall was found.

Upon making an incision over the mass in the inguinal region it was found that this mass was somewhat harder than would have been expected of a hernia and that it was sharply circumscribed. It was also found that this mass was lying directly in the canal of Nuck and could be displaced upwards about two inches. This mass was carefully removed and on account of the method of reaching it and the space left by its removal, a Bassini operation was done. Upon opening the tumor there was an escape of much thick white cheesy material and hair.

The pathological report received from Drs. Leary and Medalia, of the Tufts Medical School, shows the following:

"A small cyst from the canal of Nuck which had been freed of most of its contents. The sac 8 x 6 ccm. Wall pale and membranous. Remaining contents consist of a grayish-white substance composed of sebaceous material and desquamated cells in which a number of blackish hairs were imbedded. Microscopically the cyst wall is lined with stratified squamous epithelium set upon a dense connective tissue in which are embedded sebaceous glands and hair-follicles. The greater part of the wall is made up of connective tissue, abundant blood vessels and fat tissue. Contents consist of desquamated cells and sebum.

"*Diagnosis.* — Dermoid cyst."

A review of the literature fails to reveal a single case of a dermoid cyst in the canal of Nuck. Numerous writers have written concerning hydrocele of the canal of Nuck and congenital hernia, and several others, among whom are Reinecke[1] and Rosthorn,[2] report cases of dermoid cysts in the pelvic connective tissues.

In 1905 Talmy[3] reported a case of cyst and hydrocele of the canal of Nuck, but in his case the cyst was only a simple one, the size of a hazelnut, with a transparent wall and containing a clear fluid.

The nearest approach, probably, to the writer's case, at least as regards the character of the growth and its corresponding location, is the case reported by Patterson[4] in London, in 1903.

This was a case of a dermoid cyst, in the inguinal canal in a man aged thirty-five, which the patient had had for five years and which was supposed to be a hernia, and actual reduction under an anesthetic was attempted. Patterson, in describing the tumor, says it was about 5 inches long, elastic and oval, having its long axis in the line of the inguinal canal and did not communicate with the abdominal cavity. Its contents consisted of a thick pultaceous material and a single hair. Microscopically a section of the cyst wall showed epidermis constituted superficially by a stratum cornium; beneath this lay a narrow stratum granulosum and beneath the latter a narrow malpighian layer in every way normally constructed. A committee of the members of the council of the London Pathological Society, after a close examination of the specimen, say, "We consider that this cyst may be classified as a dermoid."

Bland-Sutton[5] does not mention the possibility of the occurrence of dermoids in the canal of Nuck and even of their occurrence in the inguinal canal. In the male he says (2d ed., p. 353), "The records are not to be relied on."

Since writing the above there has appeared in the current April number of *Surgery, Gynecology and Obstetrics* a report of a case of dermoid in the inguinal canal in a man thirty-seven years of age, by Dr. G. C. Waiss, of Chicago. This growth was first noticed fourteen years ago, at which time it was the size of a hickory nut; it grew very slowly until 1906 and from that time it increased rapidly in size. Examination of the patient upon his entrance to the hospital, May, 1907, disclosed an oval swelling in the right inguinal canal. Palpation is said to have given the sensation as though fluid would rush from one cavity to another, associated with a slight grating.

The cyst was 7 cm. long and 5 cm. wide. The interior was occupied by a pultaceous mass and a large amount of blond hair, a few hairs being attached to the cyst wall.

Microscopic examination showed a well-marked epidermis. The granular layer was not well marked and no stratum lucidum could be demonstrated. The stratum corneum was well brought out. No well-defined papillary layer was present. The reticular layer contained many large sebaceous glands. A few hair follicles and sweat glands were found.

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[1] Reinecke: Zentralbl. für Gynäk., Leipz., 1906, xxx, 909-916.
[2] Rosthorn: Handb. f. Gynäk., 1899, ii, pt. 2, 169–172.
[3] Talmy: N. Y. Med. Jour., July 29, 1905.
[4] Patterson: Trans. of Path. Soc. of London, 1903, p. 147.
[5] Bland-Sutton: Tumors. Second ed., p. 353.

Reports of Societies.

BOSTON SOCIETY OF PSYCHIATRY AND NEUROLOGY.

Meeting of May 28, 1908, with the President, Dr. C. W. Page, in the chair.

Dr. C. C. Beckley read a paper entitled

SOME BORDER-LINE CASES OF MENTAL DEFICIENCY.[1]

Dr. W. N. Bullard read a paper entitled,

THE HIGH-GRADE MENTAL DEFECTIVES.[2]

DISCUSSION.

Dr. Owen Copp: These interesting and instructive papers present a very important and difficult problem. They do not refer to all classes of the feeble-minded, but to a minority of them, a special class whose intellectual defect is not marked, perhaps not even apparent, to laymen. Their deficiencies are manifest in defective self-control and in immoral and criminal conduct. They occupy the border land between the criminal and the simply feeble-minded and insane. The incorrigible prisoner in penal institutions usually belongs to this class. The basic condition in the majority of criminals is such constitutional defect. The cases of moral insanity or imbecility in our insane asylums come under this class. They appear in greater number in the custodial departments of schools for the feeble-minded.

The alienist and physicians who have given thought to the matter recognize their mental and moral defect and irresponsibility, and approve their continuous custody in some suitable institution for the reasons stated in the papers. On the other hand, there is much difference of opinion among laymen and especially lawyers. Many judges do not have a full realization of the importance of adequate treatment of this class.

The institutional history of such person is often something like this: She is seditious as a patient, corrupts other patients, acquires influence over the nurses, wins friends among visitors and casual acquaintances who regard her confinement as an unnecessary and cruel hardship. They intercede for her with the trustees and superintendent, appeal to the State Board, demand investigation by the governor, and finally resort to *habeas corpus* proceedings before the court. Unfortunately, the court is prone to sympathize with the individual and often grants release. This is the weak link in the chain restraining such in permanent custody. There is need of active effort in educating the public and convincing the judiciary that the principles of the quarantine should apply to such defectives.

It is of primary importance that adequate public provision should be made for all classes of feeble-minded children as a continuous and progressive state policy. This special class would then be received as young children, and, growing up in the school for the feeble-minded, would remain there, thus obviating many of the difficulties of commitment in adult life. They should be classified with defectives, not with the criminal.

I should doubt the advisability of establishing independent custodial asylums for them. It would be better to maintain special custodial departments in the schools for all classes of mentally defective.

Dr. W. E. Fernald: The diagnosis of border-line cases of imbecility is simplified if it is possible to obtain the family history and the personal history of the patient, with special reference to the period of infancy and early childhood. Even in the case with very slight mental defect there is usually a history of delayed dentition, late walking, delayed speech, relatively long continuance of untidy habits, and very likely a history of convulsions as part of the history of the first few years of life.

The public school history of the patient is almost always illuminating. As a rule these cases do not compare at all favorably in their school work with the average child. It is seldom these cases are carried beyond the standard of third grade work. Difficulty in understanding simple arithmetical abstractions is very significant. The presence or absence of various degenerative stigmata is significant.

Selfishness, moral insensibility, willingness to run great risk for slight possible gain, childish tastes, lack of affection for relatives, — all these are significant symptoms. A very constant symptom is inability on the part of the patient to apply himself continuously either in school work or in any other occupation without constant supervision. In some cases with only slight intellectual defect, the inability to "make good" socially will be a deciding factor in the diagnosis.

A complete history of a given case can only be obtained by consulting the family, the teacher, the physician and perhaps the neighbors. In a given case the age, sex, social condition, physical health, school advantages, etc., have distinct bearing on the interpretation of the case.

Dr. Channing has said that in recent years there was a better understanding of feeble-mindedness. Much had been accomplished by the study of school children, and the recent law making medical school inspection compulsory is already showing interesting results. However important institutional care may be for the feeble-minded, and no doubt for certain classes of them it is imperative, the remedying of defects must be begun at as early a period as possible, and it would be to means *outside* of institutions that we must look, not only for the better treatment of feeble-mindedness, but for the better understanding of what it means, and social regulations to prevent its development.

It is desirable that there should be an investigation of the whole matter of feeble-mindedness in this state, in order to determine how widespread it may be, and help educate the public to understand it better. There should be a state commission appointed for this purpose, or the State Board of Insanity should be authorized by legislative act to undertake it. In the year 1854, Dr. Edward Jarvis, a distinguished alienist and student of social subjects, made an investigation into the subject of insanity and idiocy, and his report was of great value to the public, who before knew little of these matters. At the present time a Royal Commission in England is investigating the subject of imbecility, epilepsy and so on, with a view to their better treatment.

It may be that this society can take the initiative, as it has in times past, to obtain legislation for the better care and treatment of the insane.

Dr. P. C. Knapp said that beside the cases described by the reader and by Dr. Fernald, in which there was obvious mental defect, there were a good many cases concerning which he had been consulted in which the mental defect was not so obvious. The child could acquire a certain amount of school knowledge and, in that respect, compare tolerably with his fellows. The moral defects, however, were as great, — precocious sexuality, brutality, irritability and the like,— and careful inquiry would establish the fact that these children were really defective and degenerate. The same was true of a very considerable portion of the criminal class, especially the minor criminals who are sent to houses of correction, where they become recidivists and habitual criminals. We must recognize a limited responsibility for all these cases, which need permanent restraint to prevent them from preying upon society and perpetuating their kind. Such cases as he had seen in women, where o-ophorectomy had been done, had not led him to look with favor upon that or castration as a method of treatment for such defectives.

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[1] See p. 238.

[2] See p. 240.

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AMERICAN PEDIATRIC SOCIETY.

Delaware Water Gap, May 25, 26, 1908.

(Continued from No. 7, p. 216.)

AN UNUSUAL TYPE OF ACUTE NEPHRITIS IN CHILDREN.

John Lovett Morse, M.D., Boston, had recently seen a number of cases of acute nephritis in children in which the characteristics of the urine had been materially different from those of the ordinary form, the chief difference being the complete or almost complete absence of blood and blood elements and the presence of a large number of small, round mononuclear leucocytes. There could be no doubt that the cases were acute and not chronic. The course was essentially the same as in other forms of acute nephritis with the exception that the duration was usually shorter and the prognosis somewhat better. The histories were given in detail and illustrated the types very well. In some instances not only was blood absent but very few other renal elements were found, even when the symptoms were marked and there was a large amount of albumin. The only description which seemed to fit this type was one by Huebner. He thought the condition one of pyelonephritis rather than the ordinary acute glomerular or interstitial nephritis.

Dr. Henry Koplik, New York, called attention to the description in Osler's collection of cases of typhoid with the occurrence of such kidney trouble in which there were leucocytes and casts in the urine. He had a case now under observation in which the existing nephritis probably resulted from gastro-enteritis.

Dr. J. H. Mason Knox, Baltimore, describes similar cases running a chronic course in which sections showed convoluted tubules undergoing hyaline degeneration, the nuclei not staining at all.

Dr. L. E. LeFetra, New York, had had one case that corresponded quite closely with those of Dr. Morse, and in that case the leucocytes persisted for a long time after disappearance of the casts. The child had been otherwise in good health, and the only thing that caused attention to the condition was some puffiness of the eyelids.

President's Address:

PUBLIC SCHOOL EDUCATION.

Charles Gilmore Kerley, New York, delivered this address, in which he said the education of a child, taken in a broad sense, comprehended all that disciplines and enlightens the understanding, cultivates the taste and forms manners and habits. It meant all preparation, all means to the end of fitting the child for a field of activity whereby his own life might be made more satisfactory to himself and more useful to the state. The child should be taught how to live. The subject was considered from two standpoints: that which relates to the child's physical and that which relates to its mental development. The speaker said that in the United States to-day there are 18,000,000 children in attendance at the public schools. The school year had been increased from three months to ten months. The chief control of the child had been transferred from the home to the school, which meant that the duties and responsibilities of the public school had increased tremendously. He quoted from the report of Dr. Maxwell, superintendent of schools in New York, who said "sitting several hours a day at a desk which may not be hygienically constructed increases such diseases as curvature of the spine and often produced faults of posture and defects in eyesight." He advocated some changes in the curriculum. He would have the pupils taught reading, penmanship, geography, history and arithmetic, and leave out the non-essentials. Among the essentials he included religion, as it was the cornerstone of character; it should comprise allegiance to a Supreme Being and obligation to oneself and his neighbor. Social prophylaxis should be taught and what constitutes morality. He should be taught the deleterious effects of alcohol and narcotics. He deprecated the system of prizes and rewards for the best recitations and sets of answers as a bad one, as it overtaxes the pupil. The writer would impress upon teachers and boards of education the thought that labor is the inevitable lot of the majority, and that the best education is that which makes labor the most productive.

RECENT DIAGNOSTIC METHODS IN TUBERCULOSIS OF CHILDREN.

L. Emmett Holt, M.D., New York, presented this paper, which consisted principally in the exhibition of a series of charts illustrating the employment of the fever reactions to tuberculin, tuberculin eye test (Calmette), and tuberculin skin test (v. Pirquet). Of the fever reactions to tuberculin, of the positively tuberculous, 22 were positive, 1 doubtful and 1 negative; of cases probably tuberculous there were 17 positive reactions, no doubtful or negative; of cases probably not tuberculous, 2 positive reactions; of the positively not tuberculous, 1 positive, 60 negative reactions. No unfortunate results in any of the cases; 568 tests made. The second chart was based on experiments with Calmette test. Of the positively tuberculous, positive reaction in 24, doubtful 3, negative 8; probably tuberculous, 15 positive, 1 doubtful; probably not tuberculous, positive 2, doubtful 6, negative 508. Tuberculin skin test: of the positively tuberculous, positive 7, negative 1; probably tuberculous, positive 9, negative 1; probably not tuberculous, negative 41; positively not tuberculous, negative 3. In the skin test there were no doubtful reactions recorded, a point in favor of that test. Had not employed Moro test, with inunction. As regards reliability the fever test not so scientific. Skin test was made with three scratches and 25% tuberculin rubbed into two of them. Character of reaction definite. The skin and temperature tests the most reliable, and absolutely free from risk. Experience of others had shown that eye test is not altogether free from risk. He thought the fever reaction would disappear from clinical use, to be replaced by the other two tests. In regard to ease of application, the skin and Moro tests to be preferred. Eye test also satisfactory in this respect. He considered the tests of great assistance in the diagnosis of tuberculosis.

Dr. Wm. P. Northrup, New York, had reached the same conclusions as the essayist. He did not take a cheerful view of the injection test. With regard to the eye test he thought there was considerable risk.

Dr. Thomas Morgan Rotch, Boston, had concluded, as had Dr. Holt, that the fever test would not be so popular in the future as the eye and skin tests, but they had never met with any serious results, except where there had been a fault in the technic. In 100 consecutive cases the eye test had given no bad results. He preferred the skin test to the others.

Dr. Augustus Caille, New York, placed himself on record as decidedly opposed to the eye test as he did not think the eye a proper organ for experimentation. He thought it fairly unreliable.

Dr. Henry Koplik, New York, had found the v. Pirquet useful in those cases where fever exists and the tuberculin fever test is ruled out. The eye test he had not allowed to be used in his service as he was afraid of it.

Dr. S. McC. Hamil, Philadelphia, had ruled out the eye test because it produced a lesion which is painful, disturbing, and he considered that it was attended with some risk.

Dr. A. H. Wentworth, Boston, called attention to the positive reactions in healthy persons and said there were a good many tables published in German literature of healthy persons giving positive reactions. In one series one sixth gave a positive reaction for the eye test and almost one half for the cutaneous.

Dr. L. Emmett Holt, New York, in closing the discussion, said regarding Dr. Wentworth's point as to positive reaction in healthy persons, it might be due to a latent tuberculosis.

FRESH AIR IN THE TREATMENT OF DISEASE.

Wm. P. Northrup, M.D., New York, presented two points: one as to the practical application of open-air treatment; the other as to the cases to which it is adapted. One of the first questions was, Is cold essential? He was convinced that it was. The experience of the Health Department of New York in the treatment of tuberculosis was interesting; patients put out in the open shack slept well without dope. The writer considered this one of the most important points, that the patients become quiet and sleep. One of the first rules should be that the patient and attendant should be made comfortable, and this could be done in very cold weather if gone about in the proper manner. As to the preparation of the bed, there should be first laid upon a spring mattress a sufficiently large blanket that when folded over should represent an envelope; it should be brought over and pinned around the entire patient; inside this there should be a paper or rubber layer to keep the cold from coming up from below. The patient should be clothed in union suit. With adults it might be necessary to wheel them inside once in a while to allow them to stretch. As to type of disease adapted for the open air treatment he suggested pneumonia, scarlet fever, measles, bronchitis, acute febrile disease of any kind. Results: it kills nobody; it hurts nobody; and he was equally sure that it helps all. In doubtful, desperate cases it had often determined the balance in favor of cure.

FRESH AIR IN THE TREATMENT OF DISEASE.

E. E. Graham, M.D., Philadelphia, said that the fresh-air treatment had been of prime importance in reducing the infant mortality in his institutional practice. He had lost his dread of pneumonia as a hospital disease since the beginning of this manner of treatment in the wards. Typhoid patients did so much better in the fresh air that nothing could induce him to return to the old treatment.

A PLAN OF DEALING WITH ATROPHIC INFANTS.

Henry D. Chapin, M.D., New York, presented this paper, the essential plan of treatment being that of fresh air. Most satisfactory results were reported in cases suffering from malnutrition because of bottle feeding. He advocated obtaining individual environment for these children. Institutions and hospitals should be only a "hold up" for acute conditions, and the children should be gotten out of the institutions as soon as possible; they should be boarded out in the country.

Dr. Augustus Caille, New York, said that he was in full accord with everything expressed by the three essayists. Twenty years ago he had tried to get those in control to understand the importance of fresh air to children, but his attempts had been unavailing. At present they used a roof garden. He believed that the breathing of fresh air was the most important therapeutic agent we possess.

Dr. A. Jacobi, New York, referred to his experience in 1870, when he had proposed boarding out infants, and had shown those in charge that of 100 cases admitted to the institution and retained there over three months, 100 died. He had been asked to resign for expressing such views and finally left the institution. He approved heartily of the endeavors of Dr. Chapin in this direction and was glad he had been more successful. He believed that rachitis was due more to bad air than to bad food and advocated the fresh-air treatment for that disease, which he said fifty years ago was hardly known in the United States, before immigration and poverty had existed to such an extent.

Dr. R. J. Freeman, New York, referred particularly to the fresh-air treatment in measles; all of the cases that had been put out did remarkably well. He agreed with Dr. Jacobi as to rachitis.

Dr. J. P. Crozer Griffith, Philadelphia, thought there could be no doubt as to the advisability of having these children breathe fresh air.

Dr. E. M. Buckingham, Boston, reported cases of pneumonia suffering with dyspnea in the hospital and relieved by putting them out in the air even when not relieved by administration of oxygen.

Dr. C. B. Putnam, Boston, said that when he first became connected with the Massachusetts Infant Asylum, thirty-five years ago, they were just beginning to farm out a few of the children; now of 125 patients less than 25 were kept in the hospital, the rest boarded out in the country, and there had been a remarkable reduction in mortality.

Dr. L. E. LaFetra, New York, said that the objections made to the treatment in private practice could be overcome by using the inside awnings, which allow the child to breathe the fresh air without being exposed.

Dr. Chas. G. Kerley, New York, had been particularly interested in the treatment of typhoid in this manner. He had been surprised at the readiness with which intelligent people took it up. He thought Dr. Chapin had struck the keynote of the management of these cases of atrophic infants. As to rachitis, he still believed it was a nutritional disorder *per se*.

Dr. Samuel S. Adams, Washington, had gotten the same good results with the fresh-air treatment and had been surprised at how even the ignorant show a willingness to carry it out.

Dr. F. S. Churchill, Chicago, thought the people were very ready to carry out this form of treatment, much more ready than the profession at large realized. He had no difficulty whatever in private practice, and in dispensary work had assistance by having one of the nurses follow up the cases, going directly into the home and looking after them.

Dr. P. J. Eaton, Pittsburg, said that Dr. Northrup's famous paper entitled "23" had given him the inspiration to teach the fresh-air treatment to nurses, and he had now a corps of nurses who could carry out intelligently what was desired along this line.

Dr. John Lovett Morse, Boston, called attention to the fact that while a great deal was being said about the benefits of fresh air for sick babies, it did no harm to well ones.

Dr. E. E. Graham, Philadelphia, said, in closing, that he had pointed out that in the early part of the nineteenth century this subject had been appreciated by a few. At a meeting in Philadelphia, in 1864, Dr. Jacobi had been quoted as decidedly opposed to the Foundling Hospitals. The matter of boarding out these children had been talked about for a century and had been practiced by a few men, but we were only now beginning to preach the subject energetically.

Dr. Wm. P. Northrup, New York, in closing, said that as we had raised the standard of quality of milk and of the drinking water supply, so we should bring into prominence this other hygienic consideration. Fresh air, he said, was so cheap that it was not appreciated. As Oliver Wendell Holmes had said:

> "God lent his creatures light and air
> And waters open to the skies;
> Man locks him in a stifling lair,
> And wonders why his brother dies."

Dr. Henry D. Chapin, New York, in closing, said that he felt very deeply on this subject and thought the time had come for those who were supposed to know something about this subject to speak, and in no uncertain manner.

THE NEED OF POST-GRADUATE INSTRUCTION IN PEDIATRICS.

Augustus Caille, M.D., New York, said there was still lack of system and conformity in making a medical practitioner. As a pediatrist, the average graduate was sadly deficient, unless he had had the good fortune to spend six months as an interne in a children's hospital. Practical instruction was urgently needed. A large ambulatory service was one of the *sine qua non* essentials for such teaching. Bedside teaching, to be of value, should permit the student to visit the ward at a set time two or three hours each day. He thought the broadening influence of pediatric study had not been sufficiently emphasized. There was urgent need for practical post-graduate study.

MODERN LABORATORY FEEDING AND THE WIDE RANGE OF RESOURCES WHICH IT PROVIDES.

Thomas Morgan Rotch, M.D., Boston, read this paper. He stated that what he wished to place before the profession was the result of his seventeen years of study of the advance which had been made through the means of the laboratory methods. He pointed out that the resources of the milk laboratories were such that physicians could prescribe combinations of any known food. Following out this idea, he explained that it was no longer necessary to feed an infant with a patent or proprietary food because that food had seemed to agree best with an individual with a weak digestion. He stated that careful chemical analysis had now made us familiar with the food constituents of all the patent and proprietary foods. Resulting from this it was now possible to make exactly the same combinations as appeared in these patent foods at the laboratories and that the prescription for these compounds could be written in percentages. He pointed out that each of the advances which had been made in the combination of the ingredients of the various foodstuffs had really emanated from the chemists in charge of the milk laboratories. Of especial importance, next to that of the work on the separated proteids, whey and casein, which now for some years had been obtained from the laboratories, was the possibility of prescribing the carbohydrates to a much wider extent than ever before. He explained why and how maltose was preferably used instead of lactose in cases where there was an over-production of lactic acid, and how, on the contrary, where there was an over-production of butyric acid, lactose was preferable to maltose. He showed how it was no longer necessary to make use of the mechanical action of the starches in making the casein precipitate final, since the divided proteid accomplished this much better and much more intelligently. He explained also how the supposed value of a well-known patent food, whose chief ingredient was maltose, could be obtained on a laboratory prescription by simply prescribing dextrinized starch and thus obtaining besides maltose a residue which corresponded to that in the above-mentioned food, in both cases the residue being what was claimed for the food in regard to its laxative properties. He stated that it was a mistake to think that centrifugal cream must necessarily be used in the laboratory prescriptions and that, on the contrary, the laboratory was always willing to make up the prescribed fat combinations from gravity cream when this was asked for by the prescribing physician. One of the greatest advances which has been made within the last year in regard to the possibilities of laboratory modifications on physicians' prescriptions, when wishing to use laboratory methods, was the use of the lactic acid bacillus in pure culture. He said it was well known that there were a great many different strains of the lactic acid bacillus, some good and some inferior, but that a strain had now been obtained and was kept at the laboratories which was exceedingly successful in killing the especial ferment which produced the fermentative diarrheas; that the physician could now prescribe the pure culture of lactic acid bacillus for cases of this kind, and that its use had been followed by the greatest success. He also showed how, by simply prescribing a certain percentage of lactic acid, this degree of acidity could be used for purposes of digestion without necessarily allowing the process to go further.

Dr. Rotch finally said that what he had attempted to do was to prepare a prescription card for the profession at large; that this prescription card could be used for prescribing any compound of foodstuffs and any of the ingredients in the required percentage, and that this prescription card would have on one side of it explanatory notes which would enable the physician to see at once what percentages of the different combinations should be used. He expressed his appreciation of the information which he had obtained from Professor Howe, of the State Normal School, in connection with all the good work which had been lately done under his supervision at the Walker-Gordon laboratories. The prescription blank represents on one side an explanation of why each of the several compounds which can be obtained at the laboratory is used; the name of the compound comes in the next column,—for instance, fat, lactose, maltose, lactic acid bacillus, etc.; and then percentage columns come on the other side again, in which the definite figures can be placed.

Dr. L. Emmett Holt, New York, had also been working along the lines suggested by Dr. Rotch's paper. He had found that gastric digestion goes forward largely according to the amount of HCl present. In no single one of the experiments had there been found a deficiency of pepsin in the infant's stomach, but there had been found great variation in the amount of HCl.

Dr. Henry D. Chapin, New York, also advocated the scientific application of the various diluents that had been found useful. He had also read a paper written with the same object with which Dr. Rotch had prepared his paper, namely, recognizing that proprietary foods did in some cases do good, to find if we could not as physicians utilize the good in them in a scientific way. He believed that the whole subject of infant feeding could only be satisfactorily studied from the biological standpoint.

Dr. Augustus Caille, New York, respected the scientific methods, but thought they could be managed only in the hands of a few persons.

Dr. J. P. Crozer Griffith, Philadelphia, was a thorough believer in all that is done in the matter of feeding scientifically, but thought it difficult to teach it in a way that would enable the average student to comprehend it.

Dr. W. P. Northrup, New York, said the great triumph of the laboratory to his mind had been the lesson in the production of a pure milk with a known fat content of unvarying degree.

AN INQUIRY INTO THE STATUS OF THE KINDERGARTEN.

Isaac A. Abt, M.D., Chicago, presented this subject. In reply to inquiries sent out, he had 119 replies from physicians, 66, or 55.46%, in favor of the kindergarten; 25, or 21%, unfavorable, and 23, or 23.50%, indifferent. In the hope of throwing some light on the medical aspect of the kindergarten question, the investigation of of which the paper was a report was instituted. The writer sent questions to physicians in various parts of the country and to kindergarten teachers and mothers. Of the mothers there were 70 replies; favorable 43, or 61.42%; unfavorable, 11, or 15.71%; indifferent, 16, or 22.85%. Of 43 replies from superintendents, 32, or 74.41%, were favorable; 5, or 11.46%, unfavorable; 6, or 13.95%, indifferent. Of kindergartners, 26 replies; 25, or 96.15%, favorable. Of 21 replies from primary teachers, 14, or 66.66%, were favorable; 3, or 13.33%, unfavorable; 4, or 19.03%, indifferent. From the standpoint of physicians, 42 favorable and 15 unfavorable from the East; 17 favorable and 6 unfavorable from Middle West; 3 favorable from the West; 2 favorable from the North, and 1 each favorable and unfavorable from the South. Twelve kindergartners write of proper or improper conditions existing. Best average age to commence, five years. 47.90% of all physicians favored kindergarten for both rich and poor.

Dr. Thomas Morgan Rotch, Boston, in discussion, said that the chronological age of the child should be ignored. Children should not be classified in that way, but by their development.

Dr. Wm. P. Northrup, New York, thought that in the future pediatrists would take more interest in the question of the kindergarten.

Dr. F. S. Churchill, Chicago, thought that the opinions about the kindergarten among medical men and a great many mothers arise from error as to its true object. The well-regulated kindergarten tries to steer the mental development of the child. He feared there were too few kindergartners who properly grasped the idea. There should be a very highly paid teacher so that a high class would be attracted to the work. The mother was not a professional trainer of children, and he would prefer to put the child with a professional rather than with an amateur.

Dr. Henry D. Chapin, New York, agreed with Dr. Churchill that the kindergartners should be better paid and have a better status. The same thing was radically wrong in the public-school system; teachers were graded according to the size of the scholars; the early age is the critical time, and yet they have the less experienced teachers.

Dr. Chas. G. Kerley, New York, thought the matter rested entirely with the nature of the child's surroundings at home; if the child could have proper outdoor life and attention at home that was by far the best place, but there was a class of children in every city to which the kindergarten was a godsend.

THE HARD CURDS OF INFANT STOOLS; THEIR ORIGIN, NATURE AND TRANSFORMATION.

Thomas S. Southworth, M.D., and O. K. Schloss, M.D., New York, said that the discovery that the firm rounded curds occurring not infrequently in the stools of infants fed upon cow's milk are composed in part of fatty acids and soaps had led to considerable discussion and warranted a further inquiry as to the origin of such bodies. The claim had been made of late that these bodies were simply aggregations of soaps and fatty acids containing no proteid and by implication not entitled to be called curds. This was based largely upon the statements of Czerney and Kellar. Typical firm curds occurring in 75 stools passed by 38 infants were subjected to qualitative chemical tests to determine the presence of proteids, soaps and fatty acids. All of these masses responded to the tests for protein, no matter whether they were hard or soft, and regardless of the presence of soaps, neutral fat or fatty acids; the ordinary stool substance, in which these masses were imbedded, when subjected to same procedure and tests, did not give protein reactions.

Dr. I. A. Abt, Chicago, thought there was not more fertile field for investigation than this, particularly in view of the reports from the Berlin and Breslau schools, which led to the belief that there is no such thing as proteid indigestion. He had fed babies that suffered from what he supposed to be fat indigestion on perfectly fat-free milk and found that there was in the stools a curd that corresponded to the one described by the essayist.

Dr. John Lovett Morse, Boston, said his assistant had been at work along the same line and had gone into it very elaborately, working the matter out quantitatively as well as qualitatively, and he had found that the basis of the large curd in every case is a proteid. He had also found that the amount of fat in the curd varies almost exactly with the amount of fat in the food, showing that the fat is merely caught in the meshes of the curd. They also found these large curds in babies that were taking barley water.

Dr. S. McC. Hamil, Philadelphia, had found while giving a dextrinized food to a child suffering from mild intestinal disturbance curds which had very much the appearance described by the essayist.

Dr. Chas. G. Kerley, New York, had not been able by feeding gruels in any of the cases of proteid incapacity to give a higher percentage; he used them because of the additional nutrition furnished.

Dr. T. S. Southworth, New York, in closing, said it had been largely due to the writings of Czerney and Kellar that there had been this doubt as to the composition of the curd, and it seemed to him (and he was glad to hear Dr. Morse say his investigations had proven the same) that it would be possible to disprove what had been written about the matter.

FAT AND PROTEID CONTENT OF TOP MILK.

Charles A. Fife, M.D., Philadelphia, presented this paper. Had used the Chapin dipper in obtaining the top milk. The results epitomized were shown by charts. The fats in the quarts, in 17 analyses of 4 oz.: highest 22.2, lowest 17.8. In the lower grade milks the variation was much less than that. In the higher grade milks the variation was much greater. The proteids were very uniform throughout, but in the higher grades the proportion of proteids was very much less than is usually believed — considerably below 3%, about 2.75%. As to variation between pints and quarts, the quarts were as a rule more uniform than the pints, but almost always a little higher, about ½% higher, not enough to make any practical difference in the modifications. As to the composition of the bottom milk, there was very little difference between the lower 24 oz. and the lower 8 oz., so that it was not necessary to depend upon the lower 8 oz. to get a so-called fat-free milk. As to proteids, there was very little difference.

THE URINARY FINDINGS IN A SERIES OF INFANTS SUFFERING FROM INTESTINAL INFECTION.

J. H. Mason Knox, M.D., and J. C. Meakins, M.D., Baltimore, took 72 infants for the basis of this study. Nineteen used as controls, in whom the urinary findings were negative and in whom there was no intestinal infection. Malnutrition 6; diarrhea 6; indigestion 4; 53 cases of definite intestinal infection; of these, 33 toxic cases and 29 iliocolitis. In 31 of the 53 no urinary changes found; in 22, definite abnormalities were found. Of these 53 more than one half in the middle of the first year. Duration of illness averaged about ten days to six weeks. There were 34 boys, 19 girls. Cases according to urinary findings divided into three classes: (1) Only albumin, or albumin and casts. (2) In which pus was found. (3) In addition to pus, albumin, casts and bacteria and red blood cells. The writer concludes that infection of the urine occurs almost as frequently where the cases are toxic as where there is very definite intestinal lesion; that infection had its origin in the intestinal canal and then reached the kidneys secondarily.

Dr. I. A. Abt, Chicago, said that these might not be purely or simply intestinal lesions but indications of perversion of metabolism with the production of toxic substances, much the same as certain constitutional diseases produce acidosis. This would seem especially true in view of the fact that the intestinal lesions were sometimes slight in comparison with the severity of the condition.

Adjournment.

Book Reviews.

Cosmetic Surgery. The Correction of Featural Imperfections. By Charles C. Miller, M.D. Second edition, enlarged. 96 illustrations, Chicago: Published by the Author.

This is a book of 160 pages. Last winter we reviewed the first edition, a book of 136 pages. The author has added descriptions of sundry operations, with some rather bad cuts which careful study does not altogether translate. He has the inevitable "foreword," in which he proposes the term "featural surgeon." We fancy the book will be as useful as ever to operators who deal in the much-neglected subject of the title.

A Short Practice of Midwifery. By Henry Jellett, B.A., M.D., F.R.C.P.I. Fifth edition, revised. London: J. & A. Churchill. 1908.

The author has embodied in this book the treatment of obstetrical cases as carried out at the Rotunda Hospital, Dublin. The reviewer can well see why this book has gone through five editions. The style is clear, concise, forceful. Even if the statements at times seem dogmatic and we are unable always to agree with them, nevertheless they give "matter for reflection, especially as the results of the treatment advocated can be judged from the statistics appended."

The author covers well the field of Obstetrics, leaving the student with at least one accurate method of procedure for each condition. Any criticism of the book is largely based on personal differences of opinion; the fundamentals are all carefully worded. The tables at the end, analyzing nearly 26,000 cases, are most interesting, and the physicians in charge are to be congratulated on the low mortality obtained. We regret that the author has not taken notice of recent American work on the toxemias of pregnancy, but on the whole, American students of obstetrics will do well to own and study this valuable book.

Abdominal Tuberculosis. By Ernest Maylard M.B., B.S. (London); Surgeon to Victoria Infirmary, Glasgow; Late Examiner in Surgery to University of Glasgow and Victoria University, Manchester; formerly Demonstrator of Anatomy, Guy's Hospital, London. Philadelphia: P. Blakiston's Son & Co. 1908.

This is a painstaking book of 360 pages, dealing with tuberculosis of sundry abdominal organs and of the peritoneum. The author naïvely remarks: "I trust it will be found, in discussing the various sections of the subject, the following pages will indicate an impartiality in accrediting merit to the employment of any measures, be they medical or surgical." Accordingly the author allies himself with W. K. Hunter, an internist skilled in the study of tuberculosis, who writes the last chapter (XXI) of the work, entitled, "The General and Prophylactic Treatment of Tuberculosis."

The twenty chapters written by Maylard are concerned each with the discussion of tuberculosis of some one of the abdominal organs or structures.

The author draws largely upon his own case books for the illustrations of his text, and produces a work carefully arranged and faithfully compiled. He introduces us to little that is new. He systematizes and makes available the best present knowledge, dwelling always upon the fact of a general tuberculous infection being frequently associated with a localized infection.

One of the chapters which the surgeon will turn to with greatest interest is the chapter on tuberculous peritonitis, or "tubercular" peritonitis as the author writes it. The reader may be disappointed in this chapter if he seeks for the final word on the subject; but he will be disappointed without reason, for the author admirably discusses the condition, dwelling especially upon its complicated character, upon the possibilities of treatment and upon the indications for the various methods of treatment.

Excellent as the book is, it is not altogether admirable. The illustrations of pathological specimens are photographs mostly which always show inadequately pathological lesions. The author's style is often clumsy and involved, rarely interesting, lacking that lucidity and charm of expression which we are wont to look for in the scientific essays of the best Scotch and English writers.

The letter-press is admirable, the pages open well and the publishers are to be congratulated on this production.

The book is distinctly valuable, and should well find a place in the library of every reading physician.

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THE SLEEPING SICKNESS.

Broad and comprehensive measures, akin to those by which century-long infections have been banished from the West Indies and the Canal Zone, are being instituted against the sleeping sickness in Africa. It is being asked, Can these measures possibly be effective against so dreadful and widespread an infection? The answer must be that if they are ineffective, the fault will not lie with medical science which, in tropical Africa as elsewhere, has plainly shown the way. Within the last eight months a small army of physicians, bacteriologists, and other scientific men from the leading countries in Europe have taken part in the work; wherever the disease has been rife, hospitals have been established and every convenience for study supplied in fully adequate degree. There are in the African wilds laboratories, libraries, annexes for animal experimentation, and rooms for examining patients; these investigations throughout the vast area affected, are at once reported by mail to institutes that have been established for the study of the disease in London, Liverpool, Hamburg, Paris, Bordeaux, Marseilles, Antwerp and Lisbon.

It has been fully realized that a great number of native Africans must succumb unless the disease be conquered; still spreading, it is heard of every month in new regions. Nor are we civilizing whites without grave responsibility; for the spread of trypanosomiasis has in large measure been due to "rapid transit," to our more or less altruistic anxiety to bestow the blessings of civilization and progress upon the hitherto dark continent. We are familiar with the ravages of the sleeping sickness in Uganda and the Congo Free State; less is known, however, of its more recent but equally appalling devastations as far north as German Togoland and the Anglo-Egyptian Sudan; as far south as British Rhodesia; in the French Congo, Portuguese West Africa, parts of German East Africa, the central river basins of that colony, and the British East Africa and Central Africa protectorates.

It has been generally considered that trypanosomiasis cannot be recovered from; this seems now, happily to be an erroneous opinion. It would seem that the treatment by means of atoxyl and subsidiary agencies has been effective. In 1903 Lingard, in Leopoldville, found good results from the use of arsenic; in 1905 Thomas, of the Liverpool School of Tropical Medicine, had "some success" with atoxyl—arsenic acid anilide. Koch, somewhat later, secured better results in Uganda by improved methods, with atoxyl as a basis of his therapeusis. Hitherto atoxyl's greatest claim was in its palliative influence; within this year, however, the evidence forthcoming gives ground for the hope that it is essentially a remedial agent. From Urundi, on the shore of Lake Tanganyika, we learn that eighty-three patients treated with atoxyl in the early stages of the disease have entirely recovered, most of them going to work for the whites. Of seventy-six patients in the later stages treated with the same remedy, twenty-five died; it was feared that some of the others could not be saved, but the majority had improved to the degree that hope of their recovery was being entertained.

TREATMENT OF LARYNGEAL TUBERCULOSIS.

With the increasing attention which is being given to non-medicinal means in the treatment of tuberculosis, it is well that our attention should be called from time to time to methods which have been previously tried, but the merits of which may have been lost sight of in the justified enthusiasm for natural means of treatment. For many years Dr. Beverley Robinson, of New York, has been interested in the subject of laryngeal tuberculosis and he now gathers together certain clinical notes of practical importance which he has published in the August number of the *American Journal of the Medical Sciences*.

In discussing the general subject he lays stress upon the importance of tuberculosis of the larynx and of the fact that not infrequently disturbance in the larynx revealed by laryngoscopic examination may be the first sign of more serious difficulty to come. A suspicion of tuberculosis may indeed at times be more justly determined from conditions in the larynx than from the respiratory sounds in the lungs. It is also a well-known fact that tuberculosis originating in the larynx may extend from this point to other portions of the respiratory tract. The early treatment, therefore, evidently becomes a matter of very great importance, quite apart from the excessive distress resulting from an infiltration in and about the larynx.

In relation to treatment two points must be insisted upon: first, rest for the larynx, and, secondly, inhalations. The matter of rest has at different times received attention, but on the whole it has gained in importance during the last few years. Rest alone may undoubtedly at times lead to a great amelioration of the affection, but further measures are not infrequently necessitated. The details of local treatment by means of sprays, surgical methods and medicinal agents of one and another sort, it is not our purpose at present to discuss, except to call attention to the use of the so-called inhaler. Dr. Robinson upwards of twenty years ago directed attention to the value of the frequent, persistent and long continued use of a perforated zinc inhaler, fitting over the nose and mouth, through which inhalations of creasote and alcohol, or other sedative substances, might be secured. Inhalations of this sort have naturally met with varied acceptance on the part of practitioners, but on the whole Dr. Robinson is of the opinion that recent study of the question has strongly reinstated such inhalations to a position of great usefulness. Many opinions of physicians in America and Europe are quoted in favor of the use of perforated inhalers which should do much to justify Dr. Robinson in the opinion he has long held in this matter. In general, we are inclined to think that possibly too great dependence has been placed upon air, sunshine and food in certain tuberculous conditions, localized in such a way that they may be easily reached by mechanical means. However this may be, Dr. Robinson's article, again calling attention to an old method, will certainly not be amiss.

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A SCHOOL OF SANITARY SCIENCE AND PUBLIC HEALTH.

A school of sanitary science and public health is to be established, with the co-operation of the New York State Department of Health, at Cornell University. The need of facilities for the better training of health officers and sanitary inspectors has long been felt by the department and it has endeavored to meet this in a small way by its sanitary institutes in various parts of the state. Sentiment among those prominent in public health work has been gradually crystallizing in the direction of a regular school for health officers, and as a first step towards this end the State Commissioner has arranged with President Schurman for a course of twenty-four lectures to be given at Cornell University during the months of October, November, December and January. The lecturers have been selected both from the Cornell faculty and the staff of the State Health Department, and, in addition, several eminent specialists from Europe are expected to take part in the course. The introductory lecture will be by President Schurman, and among the other lecturers already announced are the following: Health Commissioner Eugene H. Porter, on Public Health Administration; Dr. Arthur Newsholme, Health Officer, Brighton, England, on Epidemiology; Dr. James Ewing, Professor of Pathology, Cornell, on Recent Results of Research upon the Causation and Transmission of Malignant Diseases; A. H. Seymour, Secretary of State Department of Health, on The Public Health Law; Prof. J. W. Jenks, on Social Problems in their Relation to the Public Health; Prof. Walter F. Wilcox, The Various Aspects of Vital Statistics; Dr. Veranus A. Moore, on Bacteriology and Comparative Epidemiology; Dr. Herbert D. Pease, Director State Hygienic Laboratory, on Immunity and Epidemiology; Prof. Simon B. Gage, on The Influence of the Action of the Laws of Heredity upon Public Health; Prof. Edward R. Tichener, on The Relation of Psychology to Preventive Medicine; Homer Folks, of the State Health Department's Tuberculosis Advisory Board, on Voluntary Organization in Public Health Work. The Health Commissioner has expressed the opinion that the inauguration of this course at Cornell marks one of the most important advances in the work in question that has ever been made in America, constituting, as he hopes, the preliminary to a broader and more comprehensive training for those engaging in it. President Schurman is also convinced that in time this tentative step will develop into a great state school for sanitary science and public hygiene.

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MEDICAL NOTES.

A Massachusetts Ward in a San Francisco Hospital. — It is stated that about $100,000 remains on deposit of the money sent by Massachusetts for the relief of San Francisco after the recent earthquake. The disposition of this money has not definitely been determined upon, but it is probable that it will be used to establish a ward in the State University Hospital in San Francisco, to be known as the Massachusetts Ward and to be used, preferably, by those who have suffered from the earthquake and fire. The appropriateness of such an application of the money is evident and the need of such a hospital ward is not less so. Correspondence between the San Francisco Relief Committee and Red Cross Executive Committee and others concerned in the collection and distribution of the money has led to this probable result.

Anti-Mosquito Work in New Orleans. — According to the recently issued biennial report of the New Orleans Board of Health the anti-mosquito service of that city consists of a special superintendent, 22 inspecting and 4 re-inspecting crews, a control crew, 2 oil wagons, a notice delivery clerk, a black-book clerk, 5 notice clerks, — all paid out of the Anti-Mosquito Fund; and the following, detailed from the regular sanitary force and paid out of the general fund: a tabulation clerk, 8 notice servers and 2 re-inspectors on red slips (ordinary nuisances). Three wagons are used, — one by the control crew and 2 for the oiling of excavations. All three assist in the collection and distribution of ladders at the beginning of each inspection tour of the city. Anti-mosquito work goes on from Feb. 1 to Nov. 30. Three general inspection tours of the city are made. The cost to the city is, approximately, forty thousand dollars a year.

Report of Collis P. Huntington Cancer Research Fund. — The second report of the Collis P. Huntington Fund for Cancer Research of the New York General Memorial Hospital contains seventeen papers which are reprints of articles for the most part already published. Work of special importance is that by Drs. Beebee and Ewing on Experimental Dog Sarcoma, which the writers believe to be a most important field of cancer research. It has been shown that the blood of a dog, spontaneously recovered from sarcoma, when transfused into an animal with a rapidly growing sarcoma, has the power of producing immediate retrogression of the tumor, usually with ultimate entire disappearance. This is one of the many important communications which this volume contains. The work is carried out on the interest of a fund of $100,000, which, however, is materially increased through gifts from various public-spirited persons. This fund is the only cancer research fund in the country having the advantage of a close connection with a cancer hospital, affording thereby a means both for clinical and laboratory study. There is, however, necessity for the endowment of wards for those incurable cases which are refused admission by practically all the hospitals in the city.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Aug. 18, 1908, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 43, scarlatina 24, typhoid fever 32, measles 20, smallpox 0, tuberculosis 38; cerebrospinal meningitis 0.

The death-rate of the reported deaths for the week ending Aug. 18, 1908, was 21.07.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, August 15, 1908, was 217, against 220 the corresponding week of last year, showing a decrease of 3 deaths and making the death-rate for the week 18.29. Of this number 129 were males and 88 were females; 214 were white and 3 colored; 155 were born in the United States, 54 in foreign countries and 8 unknown; 43 were of American parentage, 140 of foreign parentage and 34 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 31 cases and 0 deaths; scarlatina, 17 cases and 2 deaths; typhoid fever, 38 cases and 1 death; measles, 15 cases and 1 death; tuberculosis, 28 cases and 13 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 17, whooping cough 1, heart disease 27, bronchitis 3 and marasmus 14. There were 13 deaths from violent causes. The number of children who died under one year was 87; the number under five years 101. The number of persons who died over sixty years of age was 33. The deaths in public institutions were 99.

Woman's State Medical Society of Massachusetts. — A woman's medical society has been formed in Massachusetts to be known as the Woman's State Medical Society of Massachusetts.

The purpose of this society is to bring the medical women of the State of Massachusetts into communication with each other for their mutual advantage, to extend medical knowledge, to advance medical science and to encourage social and harmonious relations within the profession.

The officers consist of a president, two vice-presidents, a secretary and a treasurer, and one councillor from each district branch.

The membership consists of active, associate and honorary members.

The requirements for admission to active membership are, women graduates in medicine in good professional standing and who are members of The Massachusetts Medical Society.

Associate members consist of women graduates in medicine from recognized regular medical colleges with the privilege of becoming active members as soon as they have met the requirements, namely, membership in The Massachusetts Medical Society.

Work of Boston Floating Hospital. — The Boston Floating Hospital has up to the present time cared for more patients than it did during the entire season last year. On one day, for example, there were 121 permanent patients, 95 day patients and 94 mothers on board.

NEW YORK.

A Centenarian. — Mrs. Elizabeth McClelland died at her residence in Jersey City, N. J., on Aug. 10, at the age of one hundred and two years, having been born, in Ireland, on Aug. 4, 1806. Her last illness dated from taking a walk of a mile on a very hot day, three weeks before her death, up to which time she was remarkably vigorous for her age.

New Milk Station for Brooklyn. — The Brooklyn Children's Aid Society has just added a sixth to its five milk stations, where instruction in the care of infants is given, and has also added 6 trained nurses to those already working under the direction of the medical staff. It is stated that up to the present time twice as many bottles of milk have been dispensed this season as during the same period last year.

Death of Dr. Charles Henry Burr. — Dr. Charles Henry Burr, of New York City, died at South Framingham, Mass., on Aug. 13, at the age of fifty-three years. He was graduated from the Harvard Medical School in 1882, and for some time practiced at South Framingham and Newton Highlands. He was a successful eye specialist and for a number of years was assistant surgeon to the ophthalmological department of the Manhattan Eye, Ear and Throat Hospital, and physician for diseases of the eye and ear to the Northern Dispensary, New York.

Erythema Multiforme and Smallpox. — Dr. F. C. Curtis, consulting dermatologist of the State Department of Health, was recently called upon to make a differential diagnosis in a case of erythema multiforme which it was supposed might perhaps be one of smallpox. He states that this is the third instance of the kind which he has met with in the course of his official duties. In all of the cases there had been an initial fever preceding the eruption, of a duration suggestive of smallpox, and this, he believes, was probably the confusing symptom.

Injunction Against Pumping Gas. — Upon the petition of a citizens' committee of Saratoga Springs, Deputy Attorney-General Williams has secured from Supreme Court Justice Fitts, temporary injunctions prohibiting six companies from pumping gas from the mineral springs at that place. Governor Hughes signed a bill passed by the legislature this year prohibiting such pumping, and it is expected that the constitutionality of the act will be passed upon as a result of the proceedings now begun. The injunctions affect, it is said, property interests involving about $1,000,000.

Red Cross Day Camp for Tuberculosis. — Early in June the first Red Cross day camp for tuberculosis patients was opened by the National Red Cross Society in Schenectady, N. Y., and since then others have been established at Albany, Washington, D. C., and Wilmington, Del. Arrangements have now been completed between the New York County branch of the Red Cross Society and the medical department of Columbia University for the establishment of a similar camp on the flat roof of the Vanderbilt Clinic, on the grounds of the college. The clinic is to put the roof in condition and furnish medical supervision, while the Red Cross will provide nursing and general attendance as well as the food for the patients. At first the camp will be for the day-time only, but later it will be kept open continuously and it is expected that from forty to fifty patients can be accommodated in it.

The House Fly as a Spreader of Disease. — It would seem entirely fair to attribute the comparatively low death-rate in the city this summer, a season of exceptionally hot weather, to the increased efficiency of the means employed by the Health Department and the various agencies working in co-operation with it, to prevent disease, and especially among young children and infants. As contributing to the results attained, it is probable that the efforts made, for the first time in New York, for the suppression of the dangerous house fly have been a factor of at least some importance. Early in July the Committee on Water Pollution of the Merchants' Association, under whose auspices the remarkable and convincing investigation as to the agency of flies in the dissemination of disease was conducted last year by Dr. Jackson, formulated and caused to be widely circulated a set of simple rules designed to prevent the propagation of the insects. These for the most part related to household cleanliness, the proper disposition of garbage and other waste materials, and the use of kerosene in drains.

WATER POLLUTION. — The Merchants' Association of New York has raised a protest against the water pollution which would result from the carrying out of an act passed by the last New Jersey Legislature and going into effect on July 27, which empowers the Passaic Valley Sewerage Commission to begin work on the great trunk sewer project which it is proposed shall run through the state and empty into the ship channels of New York Bay. It is expected that the law will be invoked to put a stop to the undertaking, as competent legal opinion has been obtained to the effect that such discharge of sewage into the bay would be subject to restraint at the suit of the city of New York, if it were shown that this created an injurious nuisance. In the course of the protest, which was prepared by the association's Committee on Water Pollution, it is said: "The concern with which even the present volume of pollution is viewed by sanitarians is vastly heightened when they consider the prospect of the natural increase of New York's contribution and the additions which may be made to it by the sewage of the rapidly developing Passaic Valley and of the Bronx River Valley. If nothing is done to arrest the plans of New Jersey, and if New York continues on her present course of sewage disposal, the committee estimates the volume of fifth which will ultimately be pouring into New York Bay at the immense figure of 15,000,000,000 gallons daily." This estimate includes the sewage of the Hudson River Valley.

Current Literature.

THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES.
JULY, 1908.

1. *KOPLIK, H. *Congenital Pyloric Spasm and Congenital Hypertrophic Stenosis of the Pylorus in Infancy.*
2. MELTZER, S. J. *The Therapeutics of Self-Repair.*
3. *SEWALL, H. *Safeguards of the Heart-Beat.*
4. *NORRIS, G. W. *Cardiac Arrhythmia.*
5. *DUNN, C. H. *The Peculiarities of the Symptomatology of Rheumatism in Children.*
6. *JACKSON, C. *Statistics of Seventy Cases of Gastroscopy.*
7. HARRIS, H. *Myelogenous Leukemia and Its Treatment by X-Rays.*
8. CUMSTON, C. G. *Pyelonephritis Complicating the Puerperium.*
9. *GOMEZ, L. P. *The Anatomy and Pathology of the Carotid Gland.*
10. RADASCH, H. E. *Congenital Absence of the Urogenital System and Its Relation to the Development of the Wolffian and Muellerian Ducts.*

1. Koplik discusses the subjects of congenital pyloric spasm and hypertrophic stenosis of the pylorus in infancy with a report of 15 personal cases. These conditions he believes to be more common than is generally recognized. In diagnosis he lays stress upon the onset of vomiting in the early weeks of life (the amount of vomitus often exceeding the amount taken into the stomach), visible peristalsis and palpable pylorus. These phenomena are more constant and more marked in the hypertrophic stenosis than in the congenital pyloric spasm. Of the cases cited, those in which the diagnosis of pyloric spasm is made are not convincing. In these, improvement or complete recovery occurred after trial of different feeding methods, notably the employment of a wet nurse giving short feedings at long intervals. Lavage of the stomach is not recommended. Operative treatment was employed in two cases of hypertrophic stenosis, one resulting in complete recovery, the other in death. Koplik concludes that operation is not to be resorted to in all cases even of hypertrophic pyloric stenosis.

3. Sewall holds that insufficiency of the auriculoventricular valves may be a compensatory phenomenon to guard against over-distention of the ventricles and that this compensatory insufficiency is of so frequent occurrence that it may properly be classed as physiologic. He calls attention to the fact that the venous reservoirs are capable of accommodating without great increase in venous pressure an amount of blood much in excess of the capacity of the chambers of the heart. He believes that regurgitation of slight amounts is of common occurrence although it escapes clinical detection. As evidence of this is mentioned the frequent presence of the jugular pulse. The auricular form of venous pulse he regards, as does Mackenzie, as evidence of a certain degree of cardiac insufficiency. The ventricular form of venous pulse shows a still more serious condition.

4. Norris describes cardiac arrhythmia of five classes, as follows: (1) Juvenile arrhythmia; (2) extrasystole; (3) perpetual arrhythmia; (4) heart block; and (5) depression of contractility or pulsus alternans. These conditions are illustrated by tracings of the apex beat and of the jugular and radial pulses in each instance. The occurrence and pathologic physiology of these conditions, so far as our present knowledge extends, are discussed at length, together with methods of value for their recognition. In prognosis, the first type is of trivial consequence. Extrasystoles, though often insignificant, require careful investigation. Perpetual arrhythmia, pulsus alternans and auriculoventricular heart block are always serious.

5. Dunn, from his analysis of 223 cases of rheumatic fever in children, shows how widely the manifestations of this disease in childhood differ from those seen in adult life. The most important difference lies in the far greater frequence and importance in children of cardiac involve-

ment. Ninety-one per cent of all cases in the series had evidence of an organic lesion in the heart. The cardiac complications in childhood, moreover, are more apt to come on acutely and to cause definite cardiac symptoms than in adults. The joint symptoms in children, on the other hand, are comparatively mild and are even absent in many cases suffering from an acute infection which other evidences point to as being rheumatic fever; for example, the primary acute rheumatic endocarditis. Rheumatic fever in childhood is also peculiarly liable to recurrence of the infection.

6. Jackson briefly reports the results of gastroscopic examinations in 70 cases, in 18 of which he obtained findings of positive value. These latter include cases of peptic ulcer and of malignant disease, from two of which he obtained specimens for examination. In one case a foreign body was removed.

9 Gomez' article is a report of his studies of the carotid gland in 50 human cases and in animal material. The gland is a small body, the structure of which is described in detail, found quite constantly in close relation with the carotid artery close to its bifurcation. The gland extract was found by Mulon to cause a rise in blood pressure, but Gomez found that it produced a lowering of blood pressure. The article deals mainly with anatomy and histology. [F. W. P.]

BULLETIN OF THE JOHNS HOPKINS HOSPITAL.

JULY, 1908.

1. ROOSEVELT, T. *The International Congress on Tuberculosis.*
2. MOSS, W. L. *A Recent Visit to Some of the Medical Laboratories Abroad.*
3. DUNTON, W. R., JR. *Further Note on Mrs. Packard.*
4. SLEMONS, J. M., AND GOLDSBOROUGH, F. C. *The Obstetrical Significance of the Blood Pressures and Their Relation to the Work of the Heart.*
5. KELLY, H. A. *The Barred Road to Anatomy.*
6. BOGGS, T. R. *Variations in the Calcium Content of the Blood following Therapeutic Measures.*

THE JOURNAL OF EXPERIMENTAL MEDICINE.

JULY, 1908.

1. WELLS, H. G. *The Pathological Anatomy of Hydrazine Poisoning.*
2. DUVAL, C. W. *Melanoma of Vater's Diverticulum and Lower Portion of Common Bile Duct Causing Complete Obstruction.*
3. WOLLSTEIN, M. *A Biological Study of the Cerebrospinal Fluid in Anterior Poliomyelitis.*
4. DAWSON, P. M., AND GORHAM, L. W. *The Pulse Pressure as an Index of the Systolic Output.*
5. PIKE, F. H., GUTHRIE, C. C., AND STEWART, G. N. *Studies in Resuscitation: IV. The Return of Function in the Central Nervous System after Temporary Cerebral Anemia.*
6. JOSEPH, D. R. *The Ratio between the Heart-Weight and Body-Weight in Various Animals.*
7. *COLLINS, K. R. *The Production of Agglutinins in the Animal Body by the Inoculation of Substances Other than the Products of Bacterial Origin.*
8. ROUS, F. P. *Some Differential Counts of the Cells in the Lymph of the Dog: Their Bearing on Problems in Hematology.*
9. CUSHING, H., AND SLADEN, F. J. *Obstructive Hydrocephalus following Cerebrospinal Meningitis, with Intraventricular Injection of Antimeningitis Serum (Flexner).*
10. LAVENE, P. A., AND JACOBS, W. A. *On Glycothionic Acid.*
11. DONHAUSER, J. L. *The Human Spleen as a Hematoplastic Organ as Exemplified in a Case of Splenomegaly with Sclerosis of the Bone-Marrow.*

7. Collins found that a variety of substances induced an increase of agglutinins in the animal body as tested with a number of stains of ordinary laboratory bacteria. Among others were yeasts, the unorganized ferments as diastase, pancreatin, etc., nuclein, lecithin and the sulphates and phosphates. The mode of action is as yet undetermined. There was no change in the blood counts, so apparently the leucocytes do not account for the increased production. [R. I. L.]

JOURNAL OF INFECTIOUS DISEASES.

JUNE, 1908.

1. HEKTOEN, L. *On the Specificity of Opsonins in Normal Serum.*
2. EGGERS, H. E. *On the Interaction of Thermolabile and Thermostable Opsonic Substances in Normal Serum.*
3. TUNNICLIFF, R. *The Opsonic Index in Erysipelas.*
4. *GRAHAM, E. A. *On the Phagocytability of Pneumococci in the Sputum in Pneumonia.*
5. *IRONS, E. E. *The Treatment of Gonococcus Arthritis by Injections of Dead Gonococci and the Clinical Reaction which Follows the Injection.*
6. SELLARDS, A. W. *Note on the Nature of Opsonic Immunity.*
7. *CRAIG, C. F. *Studies upon Amebæ in the Intestine of Man.*

4. Graham reports studies on the virulence of pneumococci in pneumonic sputa, using susceptibility to phagocytosis as the criterion, as suggested by the work of Rosenau. In contrast with pneumococci isolated from the blood stream in lobar pneumonia, the pneumococci isolated from pneumonic sputa are readily phagocytable under the influence of normal serum. Out of a 127 strains of pneumococci isolated from the sputum of 26 cases of lobar pneumonia, 93.7% were phagocytable, hence non-virulent; and 6.3% were non-phagocytable, hence virulent. The duration of the disease seemed to make no appreciable difference in the virulence of the organisms isolated. Cultures from the tonsils, the trachea and the bronchi, even in fatal cases, showed no increase in the percentage of virulent strains as compared with cultures obtained from sputum.

5. See abstract of article in *Archives of Internal Medicine*, May, 1908; in BOSTON MEDICAL AND SURGICAL JOURNAL, July 2, 1908.

7. Craig gives a long and careful account of his work and methods in the study of amebæ in the intestine of man. His conclusions are based on a study of over fifteen hundred cases of amebic dysentery, besides many observations on normal individuals. He believes that at least two species of amebæ infect the intestine of man, one, pathogenic, the other a harmless commensal. To the pathogenic species the name Entameba histolytica, given by Schaudinn, should be applied, while in the non-pathogenic species the name Entameba coli, also given by that investigator, should be retained. His reasons for this belief are fully given and the article contains many references to literature on the subject. [W. B. R.]

LANCET.

JUNE 20, 1908.

1. *EYRE, J. W. H. *Melitensis Septicemia (Malta or Mediterranean Fever), No. 2.*
2. FAIRBANK, H. A. T. *Congenital Dislocation of the Hip and Its Treatment.*
3. PARAMORE, R. H. *The Support-in-chief of the Female Pelvic Viscera.*
4. NITCH, C. A. R. *Thirty Consecutive Cases of Appendicitis with Diffuse Peritonitis.*
5. JAMES, G. T. B. *On the Measurement of the Stereoscopic Visual Acuity.*
6. WATKINS, F. A. *Acidity of the Urine.*
7. HARRIS, F. H. R. *A Case of Sarcoma of the Right Os Innominatum Simulating Appendix Abscess.*

1. In the second of the Milroy lectures, Eyre describes in detail the signs and symptoms of Malta fever, with an analysis of 1,000 cases; he speakes of the morbid anatomy and histology. Diagnosis is based on the agglutination reaction, the isolation of the micrococcus melitensis from the blood, from the spleen pulp, or from the feces. He gives the technic of each of these tests. Prognosis, as far as life is concerned, is good. Drug treatment is of no avail, hydrotherapy and a change of climate are of value. As yet serum treatment is of little or no value. [J. B. H.]

June 27, 1908.

1. Lister (Lord). *Remarks on Some Points in the History of Antiseptic Surgery.*
2. Cheyne, W. W. *Wightman Lecture on the Defensive Arrangements of the Body as Illustrated by the Incidence of Disease in Children and Adults.*
3. *Eve, F. *Clinical Lecture on Experiences of the Surgical Treatment of Non-Malignant Affections of the Stomach.*
4. *Eyre, W. H. *Milroy Lectures on Melitensis Septicemia (Malta or Mediterranean Fever).*
5. Klein, E. *On the Nature and Causes of Taint in Miscured Hams (Bacillus Fedans).*
6. Colyer, J. F. *Note on the Early Treatment of Protruding Incisor.*
7. Highton, H. C. *Treatment of Malocclusion (Orthodontia).*
8. Sutton, J. B. *Case of Migration of the Cecum Producing Obstruction of the Ascending Colon.*
9. Macrae, D. M. *Note on Scurvy in South Africa, 1902–4.*
10. Raymond, F. *Relationship of the So-Called Family Diseases to a Premature Physiological Senescence Localized to Certain Organic Systems and Considered with Special Reference to the Nervous System.*
11. Allan, F. J. *The Public Telephone Call Office as a Factor in the Spread of Disease.*

3. Eve, in a general article on the surgical treatment of non-malignant disease of the stomach, in which he presents the results of 51 operations in 46 such cases, concludes that the operation of choice for ulcer is posterior gastrojejunostomy without a loop, and that any form of enteroanastomosis should be avoided in ulcer, as it tends to diminish the flow of duodenal contents into the stomach and appears to increase the risk of peptic ulcer. Finney's operation is attended with a higher mortality than gastrojejunostomy and is more difficult. Pyloroplasty is inefficient in stenosis because the contraction frequently recurs. Excision of a chronic ulcer is rarely feasible and is attended by a high mortality.

4. In the third of the Milroy Lectures, Eyre goes into details in regard to the channels of infection, speaking of air, water, dust and earth, direct contagion and food. He is of the opinion that this disease is primarily a disease of the goat, which had its origin in the Persian hills. He shows tables and statistics to confirm this view. He speaks of the seasonal prevalence of this disease, the geographical distribution, general sanitary conditions governing it and the social status and occupation of those affected. He speaks briefly of its occurrence in the army and in the navy in Malta. [J. B. H.]

Deutsche Medizinische Wochenschrift. No. 26.
June 25, 1908.

1. Müller, W. *Clinical Lecture on Resection of Joints.*
2. *Weber and Fuerstenberg. *The Arsenic Treatment of Experimental Nagana (Tsetse-fly Disease).*
3. *Elschnig. *A Contribution to the Etiology and Treatment of Chronic Conjunctivitis.*
4. Guillery. *The Cure of Opacity of the Cornea Due to Metallic Poisons.*
5. v. Herff. *The Value of Different Methods of Treatment of Bacterial Infections in the Puerperium.* (Concluded.)
6. Fischer, J. *The Auscultatory Measurement of the Blood Pressure in Comparison with the Riva-Rocci Method.*
7. Bohne, A. *A Case of Sprue.*
8. Meyer, S. *Relative Eupraxia in Hemiplegics.*
9. Zupnik, L. *Remarks on Pochhammer's Article on Local Tetanus.*

2. Weber and Fuerstenberg were unable to confirm the favorable results obtained by Loeffler in the treatment of experimental nagana with arsenious acid, and believe that he had a strain which was particularly unresistant to arsenic. With a combination of arsenious acid and atoxyl, however, they were able to cure the disease in every instance.

3. Elschnig describes two little-known types of conjunctivitis and their treatment. The first is due to hypersecretion of the Meibomian glands and is confined to the palpebral conjunctiva. Frequent emptying of the Meibomian glands by means of massage will bring about cure. The second type is due to insufficient closure of the lids during sleep, so that the portion immediately below the cornea is exposed and becomes dried up and inflamed. Gradually the inflammation extends to the remaining portions of the conjunctiva. If the eyes are protected during sleep by means of a bandage, the condition soon disappears, unless too far advanced. [W. T.]

Münchener Medizinische Wochenschrift. No. 24.
June 16, 1908.

1. Gottlieb, R. *The Physiologic Determination of the Value of Drugs.*
2. Jesionek. *The Dermatotherapeutic Employment of Static Electricity According to Suchier.* (Continued article.)
3. Frangenheim, P. *The Action of Passive Hyperemia in Animal Experiment.*
4. Dietschy, R. *Cytologic Findings in the Conjunctival Tuberculin Reaction: Ophthalmocytodiagnosis.*
5. Dilg, P. *Bang's Method of Sugar Titration.*
6. Mueller, A. *Hebeosteotomy and Premature Delivery in Private Practice.*
7. Konrich. *An Atypical Meningococcus.*
8. Burkhardt, L. *Explosive Ruptures of the Rectum.*
9. Dessauer, F. *A New Application of the X-Rays.*
10. Eysell, A. *Contribution to the Treatment of Syphilis.*
11. Obermüller, H. *The Abortion of Acute Otitis Media.*
12. Weimann, H. *A Case of Cure of a Perforated Gastric Ulcer by Simple Opening of an Intraperitoneal Abscess.*
13. Huber, J. M. *The Epidemic of Cerebrospinal Meningitis in the Palatinate during the Spring of 1907.* (Concluded.)
14. Rabelais, F. *On the Duties of the Physician.*

No. 25. June 23, 1908.

1. *Seidel, H. *Section of the First Costal Cartilage in Incipient Apical Tuberculosis.*
2. *Leber, A., and Steinharter, St. *Diagnostic Inoculation Experiments with a Fat-Free Tuberculin.*
3. Fraenkel, L. *Ovarian Antibodies and Osteomalacia.*
4. Hirschberg, A. *Contribution to Treatment with Oöphorin.*
5. Moritz, F. *Acute Dilatation of the Heart from Over-Exertion.*
6. Enslin, E. *Affections of the Lachrymal Duct and Their Treatment.*
7. v. Starck, W. *Infant Feeding with Human Milk Obtained by the Breast Pump.*
8. Hoffmann, F. A. *A Simplification of Urinalysis.*
9. Hoke, E. *A Case of Typhoid Appendicitis.*
10. Siegel, E. *Total Resection of the Sternum and Operative Cure of a Lung Cavity.*
11. Jesionek. *The Dermatotherapeutic Employment of Static Electricity According to Suchier.* (Concluded.)
12. Obituary Notice. *Obermedizinalrat Dr. Gregor Schmitt.*

1. There are three pathologic changes in the structure of the thorax which predispose to apical tuberculosis: (1) Developmental shortening and fixation of the first costal cartilage; (2) changes in the lung due to compression by the narrowed aperture; (3) changes in lung tissue due to pressure of the first rib (Schmorl's furrow). In such cases the section of the first costal cartilage (according to Freund) is to be recommended. The author has seen excellent results follow the operation. The operation is of great aid in all cases of recognizable stenosis of the upper aperture of the thorax; in cases of tuberculosis of the apex in old people, without narrowing of the upper aperture, but with partial or complete fixation; in cases where, although the chest is well developed, the apical process does not yield to internal methods. The author describes the technic of the operation, which is simple and without danger.

2. Leber and Steinharter have used a fat-free tuberculin, prepared by extraction with chloroform, in vaccination for diagnosis in tuberculosis after the method of v. Pirquet. Out of 70 cases of apical tuberculosis with slight fever, 60 positive reactions were obtained. Of 47 cases of tuberculous infiltration of upper or lower lobes, 31 reacted positively. Forty-eight cases with cavity and septic fever

were tested, with 31 positive reactions. In the non-tuberculous cases tested, 93.7% negative reactions were obtained. [R. D.]

Berliner Klinische Wochenschrift. No. 24. June 15, 1908.

1. Hueppe, F. *What Should be the Teaching of the Physician on the Dangers of the Contagious Diseases?*
2. Landau, L. *Duodenal Ileus after Operation.*
3. Braun, W. *Contribution to the Treatment of Ileus.*
4. *Grawitz, E. *The Essence of the Leukemic Disease Process and the Therapeutic Treatment of the Same.*
5. Meyer, G., and Loewy, A. *Manual Artificial Respiration for Adults.*
6. Plaut, F., and Heuck, W. *The Fornet "Precipitate" Reaction in Lues and General Paralysis.*
7. Schwarz, G. *The Peculiar Position of the Superior Horizontal Portion of the Duodenum in Rœntgenologic and Anatomic Relation.*
8. Runck, Th. *Bromural in Its Property as a Preventive of Sweating.*
9. Herz, M. *An Apparatus for Testing and Training the Function of the Heart.*
10. Pusey, W. A. *"Carbonic Acid Snow" in the Treatment of Skin Diseases.*
11. Hertzell, C. *The Observation of the Eye Ground in Transmitted Light by Means of Illumination of the Orbit from the Region of the Naso-Pharynx.*
12. Finder. *The Present Condition of Endonasal Surgery.*

4. Grawitz reviews at length the present knowledge of the etiology and pathology of leukemia. In the treatment of the disease, the most hopeful method is with the x-rays. It is impossible to attribute the action of the x-rays to leukolysis alone, for not only are the white cells affected, but also the nucleated reds. A more complicated action must be assumed for the x-ray, probably of a chemical nature, due to the splitting up of certain of the body substances. According to the author's observations, leukemic patients do better, when they have rest in bed as well as arsenic, during the time of x-ray treatment. In long-standing cases the effect of the x-rays is as a rule only palliative through the leukolysis and has no permanent effect on the abnormal structural conditions in the blood-building organs. The very acute cases, following acute septic infections, are notably unsatisfactory; those with a more chronic course do much better. The older the patient, the more palliative is the action of the x-ray, cessation of treatment in these cases being followed by an almost immediate relapse. In lymphatic leukemia with splenic enlargement, the outlook is no worse than in the mixed form, but the prognosis is worse, if general glandular enlargement is present. Owing to the more careful blood examinations of the present day, and the improvement in technic in x-ray treatment, the outlook in leukemia is not now absolutely hopeless, for a certain per cent of the cases will improve and a few will recover. [R. D.]

No. 25. June 22, 1908.

1. Krause, F. *Permanent Subcutaneous Drainage of the Cerebral Ventricles in Hydrocephalus.*
2. Ziesché, H. *The Cutaneous Inoculation with Tuberculin after v. Pirquet in its Significance for the Diagnosis and Prognosis of Tuberculosis.*
3. *Eichler, F., and Silbergleit, H. *Glycosuria Experimentally Produced by Intestinal Injury.*
4. Wollenberg, G. A. *Little's Disease and Dislocation of the Hip.*
5. Mühsam, R. *Torsion of the Gall Bladder.*
6. Tilp, A. *Implantation Carcinoma in the Abdomen.*
7. *Hausmann, T. *The Palpation of the Normal Pylorus, Etc.*
8. Schwarzmann, J. *The Action of Drugs on the Blood Serum.*
9. Knopf, H. E. *The Cure of Chronic Bronchitis by Respiratory Gymnastics.*
10. Tuszkai. *Subaqueous Examination and Treatment in Gynecology and Obstetrics.*
11. Laquer, B. *The Provision of Hospitals and Sanatoria with Good Books.*
12. Schmidt, G. *Army Sanitation, etc., during the Year, 1906–7.*

3. In their experiments, the authors have irritated the intestinal mucosa with chemicals or with the Paquelin cautery. After this manipulation of the gut, the urine of the animals showed a high per cent of sugar in those cases where the duodenum and the ileum were separately irritated. The glycosuria was temporary. A possible explanation is that on account of the sudden stimulation, the liver gives up a part of its glycogen to the blood.

7. Hausmann claims that he can locate the pylorus by palpation in 18% of cases without pyloric tumor. The palpation should be carried out with one finger, gently going back and forth over the pylorus region. The greater curvature of the stomach can be palpated in 25% of normal cases. The method is to palpate about the level of the umbilicus, when the greater curvature can be felt moving with expiration and inspiration. This is best felt when the stomach is empty, or has only a little contents. The expiratory murmur, which may be heard with slight pressure over the greater curvature, is due to the stomach contents flowing back into the upper part of the stomach. It naturally will not be heard over an empty stomach. [R. D.]

Zeitschrift für Klinische Medizin. Band 65. Heft 5, 6.

1. *Kohler, R. *The Influence of Temperature upon Experimental Glycosuria.*
2. Conto, M. *The Systolic Murmur in Pure Aortic Insufficiency.*
3. *Schütze, A. *The Specificity of Visceral Antigens.*
4. *Schütze, A. *Tabes and Lues.*
5. Staehelin, R. *The Respiratory Gas Exchange of an Obese Person in the Fasting State and After Food.*
6. *Bräuner, M. *The Daily Variations of the Work Done by the Kidneys on a Constant Diet.*
7. Buttersack. *Remarks on the Physics of Râles and Friction Sounds.*
8. *Falta, W. *The Laws of the Excretion of Sugar in Diabetes Mellitus. Sixth Communication.*
9. *Whitney, J. L. *The Laws of the Excretion of Sugar in Diabetes Mellitus. Seventh Communication.*
10. *Falta, W. *The Laws of the Excretion of Sugar in Diabetes Mellitus. Eighth Communication.*
11. *Scheltena, G. *Permeation and the Application of Its Principles to the Investigation and Treatment of Diseases of the Gastro-Intestinal Tract.*

1. Kohler investigated the effect of changes of temperature on the sugar excretion following injections of phloridzin, using rabbits and dogs. He found, specially in the former animals, almost always a decrease in the excretion of sugar following exposure to cold. By a process of exclusion he attributes this diminution to a decrease in the sugar production, which is not specific, but is a part of the general retardation of the vital processes resulting from exposure to cold.

3. Schütze tried to prove the specificity of various body cells, i. e., thyroid, adrenal, pancreas, etc., by means of the complement-fixation method. He injected animals with emulsions of these organs and then tested the serum for the presence of specific antibodies. Fixation of the complement often took place when the serum was mixed with cells of the organ used for immunization, but it also sometimes took place on the addition of emulsions of various other organs which had not been used in immunization. He was, therefore unable to demonstrate the specificity of body cells by this method.

4. This second article by Schütze reports the results of examination of the serum or cerebrospinal fluid of one hundred patients with tabes by means of the complement-fixation method. Sixty-nine per cent gave a positive reaction, and, therefore, must be assumed to have had at some time a syphilitic infection. The real incidence of syphilis in this series was, however, higher than this, for 7 patients who admitted a previous infection did not give a positive reaction. Schütze warns against the various simplifications of the Wassermann method which have been proposed, such as the substitution of lecithin for the extracts of syphilitic organs, for he claims that the reliability of such modifications has not yet been proved.

6. In order to gain a working basis for trying out the various functional tests of the kidney, Bräuner investi-

gated the daily variation in the renal function of normal persons. He determined the twenty-four-hour amount of urine, freezing point, chlorin, nitrogen and molecular diuresis of eight normal persons on a constant diet of known caloric and nitrogen content. Under these circumstances he found very considerable variations in all these factors.

8. In this article Falta describes three cases of severe diabetes in which the patient was more sensitive to an increase of proteid in the diet than an increase in the carbohydrates. The increase in the excretion of sugar following an addition of known amount of casein to the diet was much greater than could be accounted for by the sugar value of this substance, reckoning the sugar value at five times the nitrogen content. For the study of the metabolism in diabetes, he recommends the use of the excretion coefficient $Q = \frac{D}{5N+K}$ where D equals the dextrose in the urine, N the nitrogen in the urine and K the carbohydrate in the diet.

9. Whitney describes a very carefully observed case of severe diabetes in which the patient was more sensitive to proteids than to carbohydrates. During a period in which the amount of proteid in the diet was large, there was a very great retention of nitrogen. With large amounts of carbohydrate in the diet, as, for example, during an oatmeal cure, all the sugar in the diet was excreted as such in the urine and there was a very marked increase in the total amount of sugar excreted.

10. In this communication, Falta discusses the proteid metabolism in human diabetes and describes cases observed by him in which there was a great retention of nitrogen, and the quotient $\frac{D}{N}$ was higher than 5. That is to say, the sugar excreted was greater in amount than could be accounted for by the sugar obtained in the proteid and carbohydrate of the diet. This is contrary to what one would expect and leads him to believe that sugar under such circumstances must be derived from other sources.

11. By "permeation" is understood by Scheltena the passage of a long flexible tube through the alimentary tract by means of the natural forces of the body. He has been able to pass such a tube through the entire intestinal tract of an infant, so that one end projects from the nose and the other from the anus. By his method, which he describes in detail, he claims it is possible to reach any desired portion of the intestinal canal and to give local treatment or extract samples of the intestinal contents for examination. [W. T.]

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Correspondence.

TESTIMONIAL TO DR. T. S. CLOUSTON.

Boston, Aug. 15, 1908.

Dr. Clouston, the widely known psychiatrist, has recently sent in his resignation from the position of physician-superintendent of the Royal Edinburgh Asylum, which he has held for upwards of thirty-four years. In view of this fact and his distinguished services to psychiatry, it has been thought fitting that some permanent recognition of the esteem in which he is held should be made at this time. It was resolved to raise subscriptions for this purpose, the probability being that a subscription portrait will be the form the testimonial will take. Dr. L. Vernon Briggs writes as follows:

Mr. Editor: As Dr. Clouston is an honorary member of our society, it seems only fitting that we contribute to a portrait given by his friends and admirers and a committee of four has been appointed to receive subscriptions in this country.

The State of Massachusetts has been assigned to me, and to Dr. Blumer, of Providence, the other New England states. Dr. Chapin, of Philadelphia, has been selected for New York and Pennsylvania, and Dr. Brush, of Baltimore, for the states further south.

Should you subscribe, will you kindly forward to me the amount of your subscription as our plan is to send at one time the amount collected at as early a date as possible, preferably before Sept. 1.

Sincerely yours,
L. Vernon Briggs, M.D.

RECORD OF MORTALITY

For the Week ending Saturday, August 8, 1908.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	—	—
Chicago	657	312	Waltham	—	—
Philadelphia	482	182	Pittsfield	—	—
St. Louis	—	—	Gloucester	3	1
Baltimore	184	75	Brookline	4	—
Cleveland	—	—	North Adams	6	4
Buffalo	—	—	Chicopee	12	9
Pittsburg	—	—	Northampton	10	5
Cincinnati	—	—	Medford	6	2
Milwaukee	—	—	Beverly	5	3
Washington	—	—	Leominster	1	—
Providence	—	—	Hyde Park	4	—
Boston	214	99	Melrose	0	—
Worcester	36	12	Newburyport	—	—
Fall River	—	—	Woburn	2	1
Cambridge	27	16	Westfield	5	2
Lowell	33	22	Marlboro	4	1
Lynn	24	10	Revere	2	—
New Bedford	30	16	Attleboro	7	4
Springfield	20	3	Peabody	—	—
Lawrence	—	—	Adams	3	2
Somerville	17	7	Clinton	4	1
Brockton	12	7	Gardner	3	2
Holyoke	—	—	Milford	—	—
Malden	12	4	Watertown	—	—
Chelsea	5	1	Plymouth	—	—
Newton	12	5	Weymouth	3	2
Salem	12	8	Framingham	3	1
Haverhill	8	8	Southbridge	2	2
Fitchburg	9	5	Wakefield	—	—
Everett	6	5	Webster	—	—
Taunton	13	4	Arlington	—	—

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING AUG. 15, 1908.

J. F. Urie, surgeon. Retired, ordered home when discharged from treatment at the Naval Hospital, Mare Island, Cal.

H. W. B. Turner, assistant surgeon. Appointed assistant surgeon from July 20, 1908.

J. C. Boyd, medical director. Detached from command of the Naval Medical School Hospital, Washington, D. C., and ordered to continue duties as president of the Naval and Medical Examining Boards at that school.

G. E. H. Harmon, medical director. Ordered to command the Naval Medical School Hospital, Washington, D. C.

A. B. Haywood, assistant surgeon. Detached from duty with the marine detachment, at Camp Ellicott, Isthmian Canal Zone, Panama, and ordered to the Naval Recruiting Station, Pittsburg, Pa.

I. F. Cohn, assistant surgeon. Ordered to the Naval Hospital, Mare Island, Cal.

C. W. Shepard, assistant surgeon. Detached from the Naval Hospital, Mare Island, Cal., Sept. 1, and ordered to the Naval Medical School, Washington, D. C., Oct. 1, for instruction.

APPOINTMENT.

The Civil Service appointment of Dr. Frederick E. Lettice, of Schenectady, as physician to Sing Sing Prison is announced. Dr. Lettice, who was graduated from the Albany Medical College in 1902, succeeds Dr. R. T. Irvine, who recently resigned after many years' service as prison physician.

RECENT DEATHS.

Dr. John Harvey Borden, a promising young physician of Tarrytown, N. Y., died on Aug. 10. He was a member of the Pathological and Harvey societies of New York, and attending physician to the Tarrytown Hospital. Dr. Borden was graduated from the Medical Department of Columbia University in 1903.

Stephen Andrew Wood, M.D., M.M.S.S., died in Bedford, Aug. 12, 1908, aged fifty-six years.

Charles Henry Burr, M.D., M.M.S.S., of New York City, died in South Framingham Aug. 13, 1908, aged fifty-three years.

Original Articles.

THE PSYCHOPATHIC HOSPITAL AND PSYCHIATRICAL AND NEUROLOGICAL WARDS.*

BY PHILIP COOMBS KNAPP, A.M., M.D.,

Clinical Instructor in Diseases of the Nervous System, Harvard Medical School; Physician for Diseases of the Nervous System, Boston City Hospital.

In the last decade or two, the word *psyche* and its derivatives have come into such general favor in neurological circles that it seems to have as great an effect upon us as "that blessed word, Mesopotamia" to the good old lady. If we can call a thing "psychic" it seems to convey not only an idea of advanced scientific knowledge, but also to have some esoteric significance, "mystic, wonderful," to which the humble word "mental" could never attain. This may be one reason why a "psychopathic hospital" appeals to us so much more than a hospital for the insane.

The "psychopathic hospital," as I understand it, is designed to treat not only acute cases of mental disease which are definitely recognized as capable of commitment to an insane hospital, but also cases of various forms of mental disturbance which can hardly be committed under our present laws, and is designed also to serve as a place for the observation of obscure cases of mental disease. It is supposed to be under the charge of one or more highly skilled specialists in mental disease, to be a center for scientific research and to afford a special psychiatrical clinic for purposes of teaching and study, fairly accessible to the medical profession and students of medicine in our large medical centers.

All these objects are, of course, most commendable and most desirable, but the entire proposition is a curious comment upon the justness of the criticism of our hospitals for the insane, made by Weir Mitchell a dozen years ago. The objects of the psychopathic hospital are to treat acute cases of mental disease and the milder mental disorders, to study and observe obscure cases, to put the patients under the care of the most highly skilled specialists attainable, and to be a center for scientific research and clinical teaching. Should not these be the objects of every hospital for the insane, and, if any such hospital fails to accomplish such objects, is not that hospital below the standard of proper efficiency and in need of reorganization and reform? Every hospital for the insane, acute or chronic, should be truly a psychopathic hospital, putting forth its best endeavors in the study of the etiology, pathology, semeiology and treatment of the forms of brain disease committed to its care.

In one respect, however, this ideal psychopathic hospital so often advocated differs from the average hospital for the insane, and that is in the fact that it is supposed to be fairly accessible to the medical profession and students of medicine in some center of medical instruction. In most states, including Massachusetts, the policy of the public officials having the location of such hospitals in charge has been to place them somewhere in the country, "where land is cheap" and transportation dear, far away from the centers of population, off the main lines of traffic, on branch roads where trains run semi-occasionally, in a locality which renders administration difficult and any resort to the hospital by a competent visiting staff or any use of the hospital for clinical teaching practically impossible. Danvers, Tewksbury, Medfield, Bridgewater, Foxboro, Westboro, Gardner and Monson are melancholy examples of this policy. It is certainly depressing to compare the advantages of Philadelphia, as a center for medical teaching, with the clinical facilities of Blockley within easy reach, with Boston at the present time, above all when we think that, with a little more foresight and energy on the part of the medical profession, several of these state institutions now so far away might have been placed within sight of the State House and the city institutions kept upon the main land.

Boston, however, has one advantage which some other cities have not, and that is, that within the city limits there is one institution for the insane — the Boston Insane Hospital. A few years ago, the trustees, in planning for new buildings, decided, against considerable pressure, not to build detention wards, capable of housing a large number of chronic patients, but to construct at greater expense hospital wards for a smaller number of acute cases, especially planned and equipped with the best appliances and facilities for their care, as a reception hospital, especially for the acute cases of mental disease. Space was reserved for a hydrotherapeutic plant, a gymnasium, a psychological laboratory, etc. The suggestion was also made that, if necessary, an ambulance service might be instituted.

With a hospital already built and equipped, especially planned and adapted for the reception and care of acute cases, within the city limits and fairly accessible, is it not a needless extravagance for the city or state to build a new reception or psychopathic hospital as has been often urged? This hospital, it is true, is five miles from City Hall, two miles farther away than the suggested site of the psychopathic hospital near the Harvard Medical School and not in convenient proximity to the laboratories of the school. It would certainly be of advantage if it were nearer the center of the city, but we must remember one thing, that a mental case is not like a surgical case, and immediate treatment in an emergency, as in a case of hemorrhage, is seldom necessary. It makes little difference to the welfare of the insane patient whether he be transported three miles or five. It is somewhat more difficult for the person who transports him, but is this consideration or even the proximity to the medical school worth the cost, at least two hundred thousand dollars, of a new psychopathic hospital? If the state takes the Boston Hospital, as is proposed, that hospital can receive and care for the acute cases from the metropolitan district.

Only a part, and a small part at that, of the cases committed to the hospitals for the insane can be classed as acute, or can be regarded as suffering from a curable form of mental disease. In many cases, too, when the patient is suffering from a form of disease that might have been curable if properly treated at the start, it will be found that the trouble has been allowed to go on without treatment for months, until the hope of cure is extinct. Patients are often not sent to the hospital until the mental symptoms are pronounced, and until the disease has existed for months. The cases that are really acute, therefore, form only a small part of the first commitments. As a matter of fact, I understand that, on the most liberal interpretation, there have not been enough acute cases to fill more than half of the new reception wards at the Boston Hospital.

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* Read at a meeting of the Boston Society of Psychiatry and Neurology, April 16, 1908.

Why is it that these cases are in so many instances not sent to a hospital until six months or a year after the onset of the disease? Mental disorders do not differ so materially from other diseases as to vitiate the generally recognized rule that the sooner proper treatment is instituted the greater is the chance for recovery and, if recovery takes place, the shorter may be the period of illness. Certain diseases of the brain may be incurable from the start, but even in the most hopeless of all, general paralysis, there is a faint hope, according to recent reports, that early treatment may arrest if not cure the disease.

One important reason why cases of mental disease are not sent in their early stages to a suitable hospital is the fact that the general practitioner is only too often lamentably ignorant, not only of mental diseases, but the whole subject of nervous diseases. He fails to recognize the significance of symptoms that mark the onset of grave mental disorder, and explains them all with the term "only nervous," which to him and to the family is too often equivalent to "only nothing." He is unable to make accurate physical and psychical examinations which would demonstrate only too plainly the character of the disease, or, even if he can determine such simple signs as the condition of the knee jerk or the pupillary reaction, he is unable to estimate justly the importance of his findings. It may be that the disease is well advanced, that the mental symptoms are pronounced and the conduct shows striking changes before he realizes the patient's condition.

This ignorance is due, in part, to the subordinate position which has only too often been assigned to neurology and psychiatry in the curricula of our medical schools. The attitude of many teachers in medicine has unfortunately been that of indifference to those subjects, and the attitude of the student, taking the tone of his instructors, has been to regard neurology as uninteresting, exceedingly complex and wholly unimportant. Even when the student has attempted to profit by neurological and psychiatrical clinics he has often missed the opportunity of observing the early stages of mental disease, for the hospital for the insane can show him only the advanced and pronounced cases, and the neurologist in the past has frequently ignored those diseases of the brain which are left out of the textbooks on nervous diseases, and has himself been unable to appreciate, much less to demonstrate, the cases of incipient mental disease that are so often to be found in a neurological clinic.

The failure of the physician to recognize and correctly to appreciate the initial stages of some psychosis is, however, of less importance in preventing early hospital treatment of mental disease than the popular feeling toward the subject. The popular attitude, even among people of intelligence, is one of overpowering dread of any suggestion of mental disease, combined with a pretty general distrust and horror of hospitals for the insane. The popular conception of insanity and insane asylums is still based largely upon "Jane Eyre" and "Very Hard Cash" or the feeble imitations of those books, supplemented by the occasional "exposures" of the yellow journals or the more serious revelations of an imperfectly recovered patient who may have been endorsed by some sympathetic and credulous sponsor.

That the onset of mental disease may well be regarded with dread, and that its results are often fatal to life or to intelligence, is, of course, self-evident; but the unfortunate habit of classing all cases of mental disease under the one head of "insanity" has obscured the fact that many cases are mild in type, that they speedily recover under appropriate treatment and that they do not recur, leave no defect behind and have no significance for the descendants of the patient; that the forms of mental disease differ as widely from one another as simple bronchitis does from pulmonary consumption, and that the occurrence of mental disease is not necessarily to be regarded as a stigma of mental inferiority or of social disgrace. If the public can be educated along these lines, and be brought to look upon hospitals for the insane in the same way that it looks upon hospitals for general diseases, there will be much more readiness to resort to such hospitals for early treatment of the milder forms of mental disease. This process of education has already been begun by the popular lectures on the subject given by the Psychiatrical Society in New York, and at the Harvard Medical School with the aid of this society. It has taken a number of years, however, to do away with the distrust of the general hospital, and to educate the public to resort to it freely, and it will take still longer to do away with the distrust of the insane hospital. Such education should be undertaken in many different communities and not in two cities alone.

That such a process of education might encourage the public to seek early treatment for mild mental disorders in hospitals for the insane is shown by the fact that they already present themselves of their own accord in large numbers in the clinics for nervous diseases, are ready to follow out treatment to the best of their ability, and in most cases would be perfectly willing to become inmates of a hospital for a certain length of time; but the word "mental" or "insane" is a deterrent. So long as the trouble is "nervous" they have little fear, and they have no repugnance to going to an ordinary hospital or a "sanitarium," but not to an "asylum" and what they believe to be life imprisonment.

The very difficulty of admission to a hospital for the insane is an effectual barrier to the admission of incipient cases of mental disease or many forms of mild disease which might be benefited by appropriate hospital treatment. Patients and their friends shrink from the imagined publicity of legal proceedings in court, compare it with criminal procedure and defer it as long as possible. Our laws are unfortunately based upon the contentions of Charles Reade, and the protection they seek to give is ordinarily unnecessary. They may sometimes prevent conspiracy and they often prevent prompt treatment of the sick. We have, it is true, a provision whereby a patient can enter a hospital for the insane of his own free will, and fully half of the patients could be so received; but the provision is not generally known and the superintendents of our hospitals have usually been unwilling to receive patients on this basis. This failure to make use of the provisions of the voluntary admission law prevents ready access to the hospital and keeps up the popular prejudice against the hospitals to which I have referred. It should be the aim of every hospital to encourage voluntary admissions and to instill into the public mind the idea that the institution is a hospital for the sick and not a prison to which the inmate is sentenced by a judge. The legal procedures for commitment, furthermore, should be greatly modified. The need of so much precaution against illegal detention, is certainly doubtful. In the vast majority of cases some simpler method, without the cumbrous legal procedure, would answer every purpose. Instead of making any attempt to modify the present methods, however, the state has extended them unnecessarily by making them apply even to the commitment of sane epileptics to Monson, which costs the state a considerable sum in court fees and serves no useful purpose.

This difficulty in the reception of patients is responsible, furthermore, for two great evils connected with the proper treatment of mental cases. The first is the familiar barbarism of sending insane persons to jail, pending commitment. If a person, by reason of mental disease, becomes obnoxious to the public, it may become necessary for some person in authority (for example, a policeman) to take charge of him pending the proper disposal of his case. This the police try to do, as they also try to take charge of unconscious persons, injured and sick persons, and the like, who are found in public places. In the latter case they have learned that the proper thing to do is to take them to the nearest hospital, and they generally do so, — a proper and suitable act for which they have no legal authority. If the person be reported to them as insane, or if he be found on the street manifestly insane, the police take him at once to jail. A very slight change in the laws, or even as much disregard of law as is often shown in other cases, would permit the police to be instructed to take such a person to a hospital for the insane, when he could be held pending a more permanent disposition of his case, just as the general hospitals now hold the injured and unconscious. In some communities this would be difficult, but Boston has the advantage of a proper hospital five miles from City Hall and she locks the insane up in the Tombs for days.

There are, however, many cases of mental disease — the neurasthenics, the psychasthenics and the hysterical — who cannot be committed to a hospital for the insane under our present laws, but who might, were it not for popular prejudice, receive treatment in those hospitals if they could be admitted. Only by a recognition of the principle of voluntary admission and a general adoption of the same can they be received. If the present methods of legal commitment continue the psychopathic hospital would be in no better position than the present hospitals. It could not receive these patients, or cases of difficult diagnosis sent in for observation in order to determine whether they are legally insane, nor could it take the insane person arrested by the police until the slow processes of the law had been complied with. We hear much of the "open door" in our hospitals for the insane. A door is usually meant to give passage in both directions. We have the "open door" out from the hospital which is sometimes too easily opened; we need the "open door" inward, so that patients can enter easily, promptly and willingly even to a period of restraint, as they now go freely and willingly to the restraint of our contagious hospitals. That can be accomplished partly by a relaxation of the legal barriers, and still more by education of the public and of the medical profession to look with less dread upon mental disease and to view the hospital for the insane with less distrust.

I speak of the education of the medical profession as well as of the public because one of the serious defects of our present system of hospitals for the insane is their isolation from the ordinary current of medical life. Some years ago, when the question of placing the Boston Insane Hospital under an independent board of trustees was under discussion, several estimable members of the medical profession in Boston, in good standing and with some hospital connection, expressed to me their ignorance of the existence of such an institution. In many cases, of course, the hospitals are isolated by the unfortunate blunder of their location, but even when placed in a fairly accessible situation, they are still apart from medical interests. The general practitioner has nothing to do with the hospital for the insane, he never visits it, he is ignorant of its work and is content with his ignorance. The hospital, too, is deficient in making its work known to the medical profession; it has no public clinics, it has no cases to show at medical meetings, it does not make enough of an appeal to the general practitioner to prove to him that, by visiting such an institution, he can get some points that will help him in practice, even though his visit affords nothing spectacular like an operation for appendicitis; still more, even when societies specially interested in psychiatry meet within its walls, the members may not be shown cases of clinical interest, specimens from its laboratories, or new methods of treatment, but the latest thing in water-closets! Such a hospital becomes a center not for psychiatry but for aphodoscopy.[1]

In addition to this, our present hospitals are handicapped in the treatment of their patients from the fact that individual care is difficult, owing to the crowded condition of the hospitals, and the lack of a sufficient medical staff and an efficient nursing force. The duty of the head of the hospital, as I have heard it discussed by trustees, seems to be mainly to buy potatoes at half a cent a bushel less, and to raise a bigger crop of hay next year. Scientific work and improved care of the sick is subordinate. Hampered by administrative detail the superintendent must devote his time to that, and the clinical work has to be relegated to his assistants, who are sometimes too inexperienced and with too little knowledge of the subject to do the work properly. If the hospital is so remote as to render it impossible to secure a proper visiting staff, there should be separate administrative and clinical heads, so that the medical work need not suffer. Under present conditions the distrust of the hospital for the insane as compared with the general hospital is not without some reason.

The existing hospitals for the insane, constructed as they are for hospital purposes rather than as custodial institutions, should become true psychopathic hospitals, they should come into closer affiliation with the medical profession by the creation of a visiting staff, if the situation permits, by becoming active centers for scientific research, and by educating the public so that they may lose the old dread and distrust which they have unjustly acquired. Fortunately, many of our hospitals have striven nobly to escape the reproach, but much still remains to be done and many of the old restraints must be removed. No psychopathic hospital can receive the borderland, emergency and observation cases under the present laws any better than the existing hospitals. Every hospital for the insane should afford free ingress for such cases and become, if it is not, all that is now claimed for the psychopathic hospital.

Although the psychopathic hospital, as distinct from the hospital for the insane, is or should be unnecessary, if the hospital for the insane is what it should be, the case is somewhat different with regard to psychiatrical wards in a general hospital. Here, however, the question which really demands consideration has been obscured by the demands made in behalf of a limited class. The question which should actually be considered is what provision a hospital or a community should make for nervous diseases in general, and not for the few nervous diseases in which conduct is materially affected. The provision for such cases in the public institutions of Boston to which patients with nervous diseases can go, and can be assured of such skilled and special care as a surgical patient can obtain, consists of two beds, exclusive of the beds in the pauper hospital at Long Island. Bequests and appropriations have been made for the care of the sick, yet they are so expended that the surgically sick receive the most approved care, with all the adornments of nickel and marble; the medically sick receive decidedly fewer advantages, and the nervously sick are treated in the traditional fashion of step-children.

The exclusion of the specialist from the wards of the general hospital can admit of no serious defense, and the treatment of special cases by men ignorant of the specialty is, unwarranted in any institution that claims to be a modern, scientific hospital. To put a case of brain tumor under the care of a man confessedly unable to localize the lesion in a case of brain disease, or a case of psychasthenia in the service of a man unfamiliar with psychical analysis, is like putting a case of stone in the bladder in the care of a man unable to pass a catheter. It is an injustice to the patient and a barrier to medical progress, in that it prevents the study of disease by those qualified and interested in the subject, while the general practitioner, in whose ward the luckless nervous patient finds himself, has no interest in the case and lacks both the knowledge and the desire to profit by its study.

Although, as a result of this policy, the condition of the nervous patient in our general hospitals is unfortunate, the condition of the patient who is mentally disturbed is even worse. He is, of course, a disturbing element in an open ward. He will not lie quietly in bed and keep the bedclothes pinned down in the neat precision so dear to the nursing martinet; his tendency to wander about creates confusion, and his delirious talk and outcries disturb other patients. Hence the general hospital declines to receive "mental" cases and proves, by its statistics, that such cases are not treated in its wards. This is merely a quibble, for we know that many cases classed as typhoid fever, neuritis or nephritis may present marked mental symptoms, and that every hospital of any size must have in its wards a number of patients who, although not technically insane and not suffering from any disease described in a textbook on insanity, are nevertheless mentally disturbed and unable to control their acts. These unhappy patients are too often placed in the care of men ignorant of mental disease and of the best methods of treating excited patients, in a ward with an inefficient and insufficient nursing force, and subjected to excessive and needless restraint by drugs and mechanical devices, instead of humane and intelligent treatment. An attempt to get out of bed is sufficient warrant for tying the patient hand and foot. If the superintendent of a hospital for the insane were to use one half as much restraint as I have seen employed in our general hospitals he would justly be thought unfit for his position. The fight for "No restraint" is no longer waged in asylums for the insane; it has not been begun in our general hospitals. Alt, some years ago, said that violent mania was an artefact due to psychical sepsis. Our general hospitals spend thousands of dollars to secure the most perfect surgical asepsis. How much do they spend for psychical asepsis?

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[1] From ἄ φοδος = a privy.

The establishment of proper wards for nervous diseases in our general hospitals under the control of neurologists would tend to remedy this unfortunate state of affairs. It is true that a delirious surgical case must remain surgically in the hands of the surgeon, but he could receive the benefit of surgical care in a proper psychiatrical ward, where restraint and psychical sepsis were controlled by the skilled neurologist. Such wards could also afford opportunities for the study of obscure mental cases which cannot be legally committed to a hospital for the insane, and, in communities where there is no hospital for the insane readily accessible, they could serve for the temporary reception of emergency cases of actual mental disease. Here in Boston, if the accessible Boston Insane Hospital were made available by the removal of the legal barriers, and the popular prejudice were removed, the neurological wards of our general hospitals need not assume that function. They are still a necessity, even here, for the proper treatment of patients with nervous disease, now improperly treated in our general hospitals, and for the proper control of the mentally disturbed, who are necessarily inmates of our general hospitals, and whose present lack of proper treatment is deplorable. The psychiatrical ward, in some form, associated with neurological wards, is an essential in a well-equipped hospital. The psychopathic hospital is but another term for what every hospital for the insane should be, and its establishment in a community is conclusive proof that the hospital for the insane in that community is below the proper standard of efficiency.

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REMARKS UPON THE PRESENT STATUS OF SANATORIUM TREATMENT FOR TUBERCULOSIS.*

BY VINCENT Y. BOWDITCH, M.D., BOSTON,

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In the history of any great movement there are always different stages of development marked by advancing and receding waves of human enthusiasm, and its true position in the world is only determined after the test of long experience. The sanatorium treatment of tuberculosis, notably in its pulmonary form, is a marked instance of this fact, and it seems wise for those of us who have been most interested in this branch of therapeutics during the past fifteen or twenty years to give our views in the matter that we may hasten the coming of the day when we may all stand on the middle ground between absolute indifference, as shown at first, and, on the other hand, the too zealous and, one might almost say, hysterical enthusiasm evinced by the public when first awakened to the undoubted importance of the movement.

We have long ago passed through the stage of indifference, almost lethargy, which possessed the public for many years. Next came the stage of public awakening when, following the steps made by Brehmer, Dettweiler, Trudeau and others, it was proven that much could be done in sanatoria near the homes of those suffering from tuberculosis. It was in consequence of belief in this method that the sanatorium at Sharon in 1891, later Dr. Millet's institution at East Bridgewater in 1900, and the large state sanatorium at Rutland in 1898, were founded in Massachusetts. Not long after this, in consequence of the success of these institutions, came the stage to which I have alluded, of over-zealous, almost hysterical enthusiasm, chiefly among the laity; of ridiculous claims of "cures," which those with fuller experience knew were only fictitious, and of headlong desire to enlarge the scope of the work without sufficient experience.

It was at this period that those who had been for years earnestly advocating sanatorium treatment began to find themselves taking a conservative attitude, foreseeing with deep regret the inevitable result of injudicious claims. Then came the stage of reaction which is sure to follow the too rapid and unhealthy growth of a really valuable idea. This reaction has been felt in Europe as well as in America within a comparatively short time, and arose from the same causes on both sides of the Atlantic.

At this point it may be well to state the real belief of those who were pioneers in this special line of work. Never in their most enthusiastic moments have they claimed that they had found the panacea for the "eradication of tuberculosis." They have merely stated their position, from facts proven after years of experience, that by comparatively simple means a very much greater number of sufferers from tuberculosis can be brought back to health than was thought possible a quarter of a century or even a decade ago. They know now with what just ground they can pour hope of recovery into the heart of many a sufferer as contrasted with the experience of earlier days when nearly every consumptive was thought to be doomed unless extraordinary methods were adopted, involving exile from home and great sacrifice of means. To prove this to others, however, took years of patient work, until the community had awakened to what was possible.

The advocates of sanatorium treatment have, moreover, hailed the more recent movements for the establishment of hospitals for advanced cases, of dispensaries, and even for treatment in the homes of the poor as a consummation of what they have urged for years and as the surest method, when used in combination with sanatoria for hopeful cases, of eradicating this terrible disease. They regret, however, that just now many seem to have taken the attitude that because sanatorium treatment has not accomplished everything, it has done little or nothing, — a position as foolish and untenable as that of the extravagant advocates of the earlier work.

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*Read at the meeting of the American Climatological Association in Boston, June 9, 1908.

As instances of this unreasonable position, I can only refer to recent utterances of some of those who are now earnestly advocating what is the next great step in the fight against tuberculosis. In several instances we read expressions like the "utter failure of sanatorium treatment in the past years to eradicate tuberculosis." Again we find articles like one signed under a *nom-de-plume* in a prominent medical journal, casting discredit upon the idea of treatment in sanatoria because of difference of methods employed, but ignoring the fact of the immense number of sufferers who have been sent from these institutions with renewed health, ready from their own experience to spread the gospel of hygienic living as a means of prevention as well as cure of tuberculosis.

As a rule, anonymous articles or those signed by a *nom-de-plume* are perhaps best left unanswered; but when space is given to them in medical journals of high standing they may be taken by many readers as expressions of fact and so do harm to a worthy cause. In the Boston Medical and Surgical Journal of Feb. 27, 1908, is a letter from Paris [1] signed "Spectator" in which the views expressed are so utterly at variance with those of men who have had greater experience in this special line than the anonymous writer, that it is well to protest. Dr. Frederick I. Knight,[2] in a subsequent number of the Journal, March 19, 1908, gives an admirable answer; but I desire to add my protest to the tone and attitude of the former article and to offer one or two criticisms.

The writer refers to the exhaustive and most admirable work issued recently in the Thirty-fifth Annual Report of the Local Government Board (1905–6) by Dr. Bulstrode, of England, entitled "Sanatoria for Consumption and Certain Other Aspects of the Tuberculosis Question," and lays stress on the fact that the statistics of decrease in the number of deaths from consumption in the last half century fail to show any marked change since the almost universal adoption of sanatorium treatment. Based upon this statement, "Spectator" proceeds, in what can only be termed flippant style, to cast doubt upon the lasting use of such establishments in every civilized community. His quotations from the remarkable work of Bulstrode give a very false impression of what the latter really believes, and he fails to note the introduction to the work, in which Dr. Bulstrode is distinctly quoted as saying that, as to the value of sanatorium treatment in pulmonary tuberculosis "he does not consider it possible or indeed desirable to draw definite conclusions on the evidence so far available." At the same time Dr. Bulstrode shows his entire approval of the establishment of sanatoria for properly selected cases, proving thereby that he feels, to say at the least, that they are of inestimable value in the treatment of tuberculosis.

Perhaps the best answer after all to such adverse criticism is to point to the fact that applications to sanatoria are constantly increasing, a fact to which I can testify in my own experience at Sharon; this in the face of the fact that, as is always to be expected with our present knowledge, we meet with disappointments in many cases thought at first to be favorable for treatment, and in spite of the fact that many cases, chiefly those that were more or less advanced, relapse when again placed under the stress of ordinary conditions of life.

Figures and statistics may present extraordinary features, but facts are hard things to controvert. Had not sanatorium treatment proved itself of great value, we should not find a constantly increasing number of those who have been helped nor of those now seeking the same remedy. It may be well just here to quote from the paper which I read before this association in Washington last year, entitled: "Subsequent Histories of One Hundred and Sixty Arrested Cases of Pulmonary Tuberculosis Treated at the Sharon Sanatorium, 1891–1906." [3] Of the number at the time of writing (1907), 83+% were living and well under ordinary conditions of life, some of these having left the sanatorium thirteen or fourteen years before; 3.7% had not been heard from, but at last accounts they were in robust health; 13+% had died, but of these the majority had been advanced cases in which arrest of disease was a surprise; and in others tuberculosis was not the cause of death.

As a corroboration of these statements, it is only necessary to refer to the admirable paper of Drs. Lawrason Brown and Pope, giving the subsequent histories of patients treated at the Adirondack Cottage Sanitarium.[4]

These figures simply represent facts. Standing as they do, they challenge comparison with results of former days in other methods of attempted cure, recollections of which are vivid in my own mind, and are more convincing than any possible collections of statistics as to deaths from consumption, that sanatorium treatment has been, and is still destined to be, of infinite value to the human race.

That it is far from all we wish and hope for, no one could possibly grant more positively than myself. My chief object in these remarks is simply to beg those who are now so earnestly working in the still more modern methods for conquering tuberculosis not to dwell upon the limitations of any one method because it does not do everything, but to insist that every method known to science must be brought to bear upon the subject, in a spirit of cordial co-operation. Then, and not until then, shall we accomplish what we all desire.

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[1] Letter from Paris. "Sanatoria," etc, by "Spectator." Boston Med. and Surg. Jour., Feb. 27, 1908, p. 308.

[2] "Sanatoria for Tuberculosis," Dr. F. I. Knight. Boston. Med. and Surg. Jour., March 19, 1908, p. 398.

[3] Transactions of the American Climatological Association, 1907.

[4] Zeitschr. für Tuberculosis, Bd. 12, Heft 3, March, 1908. "Ultimate Test of Sanatorium Treatment and Its Application and the Results Obtained at the Adirondack Cottage Sanitarium."

GASTROMYXORRHEA.*

BY JULIUS FRIEDENWALD, M.D.,

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The presence of small quantities of mucus appearing occasionally in the fasting stomach has been noted by a few observers, as Ewald,[1] Riegel,[2] but credit is due Dauber,[3] who first pointed out the clinical significance of this condition, reporting a case of Leube's in full, and naming the disease chronic hypersecretion of mucus or gastrosuccorrhea mucosa. In a further investigation Kuttner[4] determined that this condition was not infrequent and may often be observed in certain patients if lavage be practiced on an empty stomach. Both Schmidt[5] and Tellering[6] have pointed out that a small quantity of mucus is usually observed in the fasting stomach, amounting to from 2 to 5 ccm. It is necessary, therefore, to place a limit upon the quantity to be considered normal and any amount beyond this must be regarded as pathological. Kuttner considers the existence of more than 5 ccm. of mucus in the fasting stomach as abnormal and when over 25 ccm. in amount as indicative of the condition which he terms gastromyxorrhea. In order, however, to prove the existence of this condition it is necessary to consider the method by means of which the mucus is obtained. The mucus must be constantly present or reappear at certain intervals. The patient must be accustomed to the use of the stomach tube; and the moving of the stomach tube to and fro as well as the prolonged use of the tube in the examination inducing the secretion of mucus must be avoided; on the other hand, repeated examinations must be made in order to arrive at a definite conclusion regarding the abnormal secretion of mucus. Kuttner concludes that in a certain series of cases there exists a condition in which a large amount of mucus is secreted, either permanently or intermittently in the fasting stomach.

This secretion has the following properties in uncomplicated cases of gastromyxorrhea:

1. It is grayish white, milky, slimy and stringy. It contains translucent swollen lumps of fine specks of mucus and is without special odor. Pouring from one glass to another the contents are markedly stringy, and on standing in a conical glass separate into two layers: a turbid fluid, the chief part, and a small layer at the bottom consisting of a whitish sediment enveloping finer and larger lumps and specks with masses of mucus. These particles come from the bronchial, pharyngeal and esophageal mucous membrane, and are pigmented or even mixed with pus. Sometimes masses of mucus of translucent, foamy or purulent nature coming from the mouth or pharynx float on the surface of the liquid. In some cases the mucus from the fasting stomach is colored yellowish or greenish yellow, due to a mixture with bile or intestinal secretion. In uncomplicated cases food remnants are never present.

2. The secretion in typical cases of excessive mucous secretion appears feebly acid, neutral or often alkaline. The value of total acidity varies between 6 and 8; free and combined HCl could never be detected nor was lactic acid even present.

3. The pepsin varied as determined by the method of Mett between 2 and 4 mm. and occasionally the ferment was completely absent; at times markedly diminished.

4. The test for sulpho-cyanates was negative and Trommer's test was also negative. On the other hand the biuret test gave a positive reaction. Gmelin's reaction was sometimes positive, but more frequently negative.

5. When grape sugar was added to the secretion and the mixture placed in the incubator at 37° C. no formation of gas appeared, even after standing several days.

6. The examinations for blood were generally negative, but occasionally positive.

7. The specific gravity of the mixture varied between 1.003 and 1.010.

8. Determination of the freezing point gave values between 0.29° and 0.44°.

9. The microscopical examination of the secretion obtained from the fasting stomach showed leucocytes and the nuclei of leucocytes, and more rarely some of the constituents of the gastric mucosa. Occasionally yeast cells as well as different micro-organisms were observed.

Sarcinæ or budding yeast were never present. In addition to these microscopical objects coming from the stomach there could be seen pigmented alveolar epithelium from the bronchial mucous membrane and pavement epithelium from the mucous membrane of the mouth, pharynx and esophagus. Kuttner points out that while in typical cases the mucous secretion is neutral alkaline or slightly acid with an entire absence of HCl that in a certain number of cases there is a considerable amount of free HCl. It is apparent that these cases must be considered as mixed forms of gastrosuccorrhea and gastromyxorrhea.

INTERMITTENT GASTROMYXORRHEA.

Intermittent gastromyxorrhea occurs but rarely. Many cases are probably not recognized, inasmuch as the discomfort is not lasting and the attention of the physician is not called to the condition. In this condition the attacks of increased mucous secretion occur at irregular intervals.

Etiology. — Kuttner was unable to find any evidence of locomotor ataxia in the cases that he investigated, though the sudden onset of the attacks as well as the sudden disappearance reminds one much of a gastric crisis. In two of his cases the attack took its onset with disturbance in the secretion of the nose. He therefore believes that there is a connection between the affection of the nose and that of the stomach; the mucus of the stomach, however, is not simply mucus which is swallowed, but is in large part secretion produced in the stomach itself.

Symptoms. — The attack may begin with prodromal symptoms: headache, loss of appetite, nausea, etc., but more usually begins in the midst of perfect health, often early in the morning soon after awakening.

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* Read by title at the annual meeting of the American Gastro-Enterological Association, Chicago, June, 1908.

The most striking symptom of this paroxysmal attack is severe vomiting, which is intractable in the true sense of the word, inasmuch as it cannot be successfully combated by any remedy. The vomited matter consists of large quantities of tough, slimy liquid, finally of bile and intestinal juices, but contains no food remains. In one of Kuttner's cases vomiting of bloody fluid occurred at the height of the attack. Pain in the region of the stomach is not present, or if it is, it is of no moment. During the attack the stomach refuses to retain food, drink or medicine.

The patient feels wretched, the abdomen is retracted, the pulse small, the tongue dry and the quantity of urine much diminished. The attack may extend over a period of one day or may continue from three to five or even twelve days. The attack usually ceases quite suddenly, and after the cessation of the vomiting, the patient can again take food without any annoyance. The patient enjoys good health during the interval of the attacks and often has none or very slight dyspeptic symptoms. The examination of the gastric contents after a test breakfast in the interval generally reveals a normal percentage of hydrochloric acid and only a slight amount of mucus.

The following cases illustrate the symptoms of intermittent gastromyxorrhea.

A. F., age thirty-four years of age, presented himself for treatment for a digestive disturbance which had existed at times for a period of several years, and which would disable him for a number of days at a time. Without warning and when the patient was apparently in the best of health, he was suddenly seized (and always early in the morning) with nausea and vomiting, which would continue for three to four days, when not even water could be retained. The vomited matter contained large quantities of ropy mucus from the very beginning of the attack, which would increase in quantity, and which was often mixed with bile. The attacks would recur at intervals of every four to six weeks, and would greatly irritate the patient. Between attacks the patient was in the best of health, and did not suffer from the slightest digestive disturbance. The patient was instructed to inform us at once of the occurrence of another attack, and in the mean time a careful examination was made into the case. The patient was a robust individual whose heart and lungs were normal. The abdomen presented nothing abnormal; the stomach was not dilated, and the gastric contents showed a total acidity of 48; free HCl .12%; ferments normal. After ten days another attack set in. The patient began to vomit a large quantity of mucus, which began early one morning and continued for two days; the usual remedies, such as small doses of creasote, carbolic acid, cocaine, hydrocyanic acid as well as lavage, proved valueless; suddenly, on the night of the second day, the vomiting ceased. The vomited material consisted entirely of a colorless, occasionally of bile-tinged, ropy mucus; it was alkaline, with a total acidity of 5; the ferments were absent; microscopically the mucus contained leucocytes, a few micro-organisms, and broken-down cells from the gastric mucous membrane.

The second case, T. L., female, age forty-two, presented symptoms almost identical with the case already reported, except that the attacks were ushered in by prodromal symptoms of headaches, lassitude, nausea, and a slight temperature of 99° to 100°, which preceded the attacks for one day. The attacks last five to six days in this case, and appear regularly every six weeks. They are accompanied by great exhaustion and followed by marked weakness. In a third case the attacks always followed a cold in the head, with a coryza suggesting the form described by Kuttner.

Treatment. — In the beginning of the attack Kuttner advises a thorough lavage of the stomach, which he believes may terminate the attack, though he recognizes the fact that but little can be gained from this method of treatment, or even by the internal administration of drugs after the attack is at its height. In none of our cases did lavage prove of any value at any stage; morphia given hypodermatically often gives temporary relief, and in cases of extreme exhaustion and weakness, normal salt solution enemata or infusions may be indicated. Between attacks attention should be directed to the underlying condition; that is, to the neurotic tendency, and for this purpose change of climate, hydrotherapy, massage and electricity, as well as iron and arsenic, have been recommended by Kuttner. Inasmuch as this disorder may be secondary to diseases of other organs, a careful investigation should be made as to the primary disorder, which, if possible, should be relieved. In one of our cases great relief followed a rest cure extending over five weeks.

CONTINUOUS GASTROMYXORRHEA.

The chronic or continuous form of gastromyxorrhea is more frequent than the intermittent.

Etiology. — This condition may be associated with hypersecretion of acid or with various organic diseases, or may exist as an independent functional neurosis. Kuttner has found it associated most frequently with the chronic catarrhs as well as with those nervous affections of the gastric mucosa in which there is a marked diminution or entire absence of the HCl. He also observed it in typical cases of gastric ulcer, with or without pyloric obstruction. This condition seems to be rather favored by the ingestion of starchy food. The seat of origin of the mucus is not known, but it is probably a mixture of the secretion of the superficial epithelium, and of the mucous glands coming in largest measure from the glands of the pylorus. According to Kuttner it is impossible to determine whether this condition is always accompanied by a definite lesion of the mucous membrane, but inasmuch as it is frequently associated with hypersecretion of acid, it is evident that, like the latter, it may depend upon nervous influences.

Symptoms. — There are no characteristic symptoms and the condition may be discovered in some cases even in which there are no subjective symptoms whatever. The diagnosis is established by the discovery of large quantities of mucus in the fasting stomach, shown to be the product of the gastric mucous membrane, and not originating from other sources, such as the nose, mouth, or pharynx. It is of no importance whether subjective symptoms are present or not. Kuttner examined his patients in the morning, ten to twelve hours after any food had been ingested. Lavage of the stomach the evening before is only necessary if stagnation is present.

Treatment. — Lavage should be practiced for the removal of the mucus providing there is no contra-indication to this procedure; instead of this method of treatment Kuttner advises the administration of mineral waters, these being chosen with reference to the nature of the associated disease, the general condition of the patient and of the various gastric functions. The following table gives a synopsis of the histories of our 12 cases:

No.	Name.	Age.	Sex.	Symptoms.	Gastric Contents. Total acidity.	Gastric Contents. Per cent free HCl.	Contents from fasting stomach.	Treatment.	Result.
1	T. K.	29	F.	Pressure after meals Burning in stomach Fullness and distention	72	0.11	40–60 ccm. of mucus Total acidity, 6	Lavage with solution of Agno 3	Markedly relieved
2	J. S.	34	F.	Fullness and distention Vomiting of mucus	54	0.12	25–30 ccm. of mucus Total acidity, 5	Lavage hydrotherapy	Improved
3	T. F.	25	M.	Eructations of gas Vomiting of mucus	48	0.14	30–50 ccm. of mucus Total acidity, 8	Lavage hydrotherapy	Not improved
4	F. S.	48	F.	Nausea and vomiting of mucus	76	0.20	35–40 ccm. of mucus Total acidity, 0	Carlsbad water cure	Much relieved
5	P. T.	52	F.	Sick headaches and eructations	62	0.18	40–80 ccm. of mucus Total acidity, 0	Lavage with solution of Agno 3	Not relieved
6	F. B.	31	M.	Vomiting of mucus	58	0.16	50–60 ccm. of mucus Total acidity, 4	Lavage hydrotherapy. Belladonna	Relieved
7	G. R.	58	M.	Pressure and distention	40	0.10	30–40 ccm. of mucus Total acidity, 0	Lavage with solution of Agno 3	Much improved
8	L. E.	43	F.	Distention after meals Heartburn	78	0.22	45–55 ccm. of mucus Total acidity, 0	Lavage with solution of Agno 3	Not relieved
9	M. G.	38	F.	Nausea and vomiting	40	0.11	40–50 ccm. of mucus Total acidity, 8	Lavage	Not relieved
10	T. S.	31	F.	Neurasthenia and pressure in stomach	52	0.15	35–60 ccm. of mucus Total acidity, 0	Lavage with solution of Agno 3	Much improved
11	I. F.	42	F.	Nausea and vomiting	46	0.13	30–45 ccm. of mucus Total acidity, 0	Carlsbad water cure	Improved
12	M. E.	47	F.	Vomiting of mucus	48	0.14	45–70 ccm. of mucus Total acidity, 4	Lavage with solution of Agno 3	Markedly improved

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RENAL INSUFFICIENCY. THE IMPORTANCE OF ITS EARLY RECOGNITION.*

BY G. M. RANDALL, A.M., M.D., LOWELL, MASS.

The meanest type of selfishness is the hypochondriac. To them the pursuit of health is an end in itself. To live for health alone is not a philosophical life. To live a well-rounded, broad, efficient life is an end worth striving for, and to do other than this is suicidal. It is quite possible to err in our estimate of efficiency and to devote too much attention to the attainment of an impossible ideal.

A gilded bucksaw might look attractive, but the prime requisite in a bucksaw is that it be sharp and set at a gauge suited to the wood it is to cut. Each man's station in life calls for certain conditions, physical and mental. If he does not possess these conditions, his life is necessarily inefficient.

There is no room in this generation of progress for human inefficiency. Think for a minute of the vital energy that is being spent in this, the most progressive epoch of the world's history, in attempting to increase the efficiency of machinery. Witness the hydraulic and steam turbine, cable and cableless transmission of words and pictures, internal combustion engines, electrical machinery and apparatus. It is an age of conservation and adaptation of energy. From our standpoint, the mechanism most worthy of conservative study is the mechanism of the human being. It belittles our profession to concern ourselves chiefly with repairing damage done, or treating organic diseases after they are established anatomical facts. How many deaths from tuberculosis are saved by early application of principles of hygiene. How many narrow chests, dwarfed intellects, deaf ears and inefficient lives are saved by the simple tonsillotomy early performed. How many years senile changes are deferred by the establishment of suitable diet and régime. We may not stop Father Time, but we can certainly make him go slower in most cases.

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* Read before the Middlesex North Medical Society.

To accomplish most, the laity must needs be informed on vital matters, and no source of education is so powerful as the influence wielded by the family physician. At the present stage of municipal morality (?) the labors of health boards and officials are hampered by accusations of graft by the party on the outside. How strenuous was my fight, and how much persuasion was required a few years ago, when I tried to administer the affairs of a board of health in a classic New England city. Often I called to my aid the police, and at one time during an epidemic of smallpox the chief of police advised me to go armed while making my night rounds because I had enforced the law as to vaccination.

The pros and cons of antivivisection have recently been aired before Congress, with inevitably good results. Much is being accomplished by inspection of the conditions of labor employed by large and small corporations in this state. I mention these phases of forensic medicine merely to illustrate the recognized importance of prophylaxis.

The subject which I wish especially to bring to you now is prophylaxis of renal and allied diseases and disturbances. I claim no special knowledge but a special privilege. It has been my lot to have had association with the pathological department of one of the hospitals in Boston during the past four years, and my work has been confined to renal and blood work; hence my interest in the present subject.

We are accustomed to say that mathematics is the only science. There will be no new facts of mathematics developed, though they may be discovered. Our knowledge of chemistry to-day seems to me to warrant the statement that it is an exact science; because new elements are discovered now and then, it does not follow that chemistry is not exact. The science of chemistry is more recent in its findings than mathematics. The science of chemistry is broader and for its comprehension is required more physical research, but the facts once proven are as exact as the problems of Euclid, enunciated three hundred years before Christ. Whatever the view of this question, it is more in the line of progress to consider chemistry an exact science, and it is certain that in no phase of the healing art is chemistry so conspicuous as in the diagnosis of renal diseases and disturbances.

The treatment of internal disease is an art and always will be, inasmuch as it always involves the personal factor with all of its variations of physician and patient. The physician should be a scientist, as well as an observer of empiricism. He should be able to make a diagnosis with his microscope and test tubes as well as clinically. This is especially true in disturbances of the kidney, if we are to accomplish anything in the way of prevention.

There is a normal equilibrium of metabolism. In health, waste and reformation of tissue go on coincidentally, and, consequent upon these processes, new products are formed, crystalline and amorphous and in solution in different organs and tissues and fluids of the body. Enough end-products are eliminated by the kidney to warrant us in considering this organ the chief emunctory, and chemistry is exact enough so that by analysis of the urine we get more exact data as to the tissue changes going on than can be gained by any and all other means of diagnosis combined. But exclusive examination of the urine without clinical data may be delusive. On the other hand, various forms of nephritis are insidious, and a person engaged in the ordinary activities of life may drift unconsciously along with a slight renal insufficiency, unnoticed until some symptom, perhaps persistent and frequent headache, or perhaps some other cardiovascular manifestation of renal disease, some sign of arteriosclerosis, or other pronounced clinical symptom, which calls this person to consult a physician. It is quite possible, and probably within the experience of most of us, to have seen cases of uremic coma occur as the first clinical manifestation of renal disturbance. However, there must have existed a long time previously chemical and microscopical features which would have shown pathological conditions had a laboratory diagnosis been undertaken.

The most scientific, because the most rapid and certain means of renal diagnosis is the microscopical examination of a centrifugalized twenty-four-hour specimen, though it is claimed by most excellent authorities that a urine sedimented twenty-four hours in a conical urine glass has certain advantages over the centrifuge. Very early and very exact diagnosis of lithemia and oxaluria are made on the microscope slide unaided. Both are dietetic diseases and due solely to incomplete tissue metabolism, and, neglected, lead up inevitably to pyelitis, and this in turn to nephritis, unless some intercurrent affection closes the scene.

It has been clearly shown by Johnson, of Boston, and other authorities, that as a means of exact unilateral diagnosis, the cystoscope and catheterization of the ureter is not to be neglected. Examination of a mixed specimen of urine in purulent pyelitis and pyonephrosis is quite unsatisfactory. Cystoscopic examination with catheterization of the ureter at once clears up all doubt, and in these cases which do not improve under general medication, dietetics, diuretics and antiseptics, renal lavage and local medication of the renal pelvis will often obviate the necessity of a major operation, either nephrectomy or nephrotomy.

In considering the natural history of diseases and disturbances of the kidney, it may be well to allude to the toxicity of normal urine. Normal human urine is intensely toxic, as would be correctly surmised when we consider all of the products of tissue metamorphosis which are eliminated by the kidneys. The amount of urine expressed in cubic centimeters (ccm.) necessary to kill one kilo of rabbit is spoken of as the urotoxic coefficient. This coefficient is determined by injecting into the jugular vein of a rabbit a specimen of mixed urine of a twenty-four-hour product. This is allowed to flow at the rate of 3 ccm. per minute until the animal is dead. The number of cubic centimeters of urine used to produce lethal effect divided by the weight of the animal in grams determines the urotoxic coefficient. For example: If 100 ccm. of urine produce death of a rabbit weighing 2,000 gm., the fraction is 100 divided by 2, or 50. The greater the coefficient, the less toxic the urine. The normal toxic coefficient is between 45 and 60. The more efficient the work of the kidneys in elimination, the more toxic the urine. In other words, the greater the disintoxicatory action of the kidneys, the less the coefficient. The exact chemistry of all the toxic elements in the urine is not known. Certain of the potassium salts which are found in normal urine are exceedingly toxic. Other toxic elements have enzymotic activities and properties. There are albuminoses and albuminoids analogous to the secretion of the salivary glands of certain reptiles.

Probably there has been no time since the study of medicine began on a scientific basis that so much has been accomplished in urinary research as during the past decade. It is no doubt within the memory of many now in active practice when gout and rheumatism were about all the evils recognized as resultant from an excess of uric acid. We now, by conspicuous sequence, trace many constitutional disturbances to this product of faulty metabolism. "Ye cannot gather grapes of thorns nor figs of thistles." Neither can we manufacture within our bodies any substance unless we supply the component elements. Nitrogenous end-products do not come from a carbohydrate intake.

It is hardly necessary to define "renal insufficiency." However, for uniformity of understanding, I would suggest that it be considered a *criterion by which we recognize certain constitutional diseases and disturbances of other organs and functions which tend to progress to organic renal lesions, chiefly spoken of as parenchymatous and interstitial nephritis.* When we speak of parenchymatous nephritis we must not lose sight of the fact that the interstitium is involved as well. Likewise, an interstitial nephritis cannot exist without involving the parenchyma. The generic term "Bright's disease," brought into use in 1828 by Richard Bright, is not specific enough for exact research or clinical treatment, inasmuch as it is now specifically subdivided into a dozen forms of kidney diseases, having different causes, different pathology and different treatment.

Probably the most frequent form of nephritis is interstitial or contracted kidney. The causes are numerous: excessive expenditure of energy with the resultant elimination of toxic waste products, high blood pressure with destruction of parenchymatous tissue, and relative or actual increase of interstitial tissue are the main anatomical characters. It is considered by good pathologists as perhaps the most frequent cause of death, not directly, but by inevitably co-existing diseases, such as apoplexy, cardiac failure, pneumonia, arteriosclerosis, hepatic cirrhosis, etc., etc. It may, indeed, be truly said that a man is as old as his kidneys. The senile kidney presents the type of interstitial nephritis. The causes of this type of nephritis are the elimination through the kidneys of various toxic and irritating substances, as produced in lithemia, oxaluria, diabetes, lead poisoning, alcoholism, mental and physical effort, especially of a worrisome nature. The causes are as numerous as the excesses and vexations of life. Its progress is subtle and as treacherous as a snake in the grass. No function of the body is exempt from perversion by its influence. Tissue changes are wrought in other organs to compensate for the crippled kidney. The patient is cognizant of renal diseases but rarely until late in its course, and is prone to treat lightly the advice of his physician, who has perhaps accidentally detected some pathological condition while making a routine examination, either for life insurance or some simple affection.

We read about and hear spoken of "physiological albuminuria." We also read of platonic love. One is as correct as the other. Both show low resisting power, and both usually succumb in a most usual and natural sort of a way, one to nephritis and the other to the stork. Physiological albuminuria is a play of words, used to placate or temporize and has no excuse in fact. Albumin in the urine is pathological as certainly as a brown granular cast with fat is pathological. It may be some distance removed, but it is the "handwriting on the wall," if you will only read it.

Without going into the specific details of treatment of the various forms of nephritis, some general considerations of prophylactic treatment may not be amiss. The most conspicuous means of hereditary transmission are through syphilis and diabetes. The only effective line of defense is the every-day life. The daily diet is the greatest evil. The nitrogenous intake is usually far in excess of all demands, and it is beyond the physiological power of the kidney to eliminate the products of this excess without harm. Haig has set the whole medical world thinking about uric acid and the long train of evils resulting from its excess in the blood. His conclusions, I believe, are generally accepted. There is no one more potent factor in causation of diseases of the kidneys than an excess of uric acid in the blood.

A diet containing all necessary food principles may be selected that entirely eliminates the flesh of animals. Likewise, other common articles of diet which are rich in purin bodies, such as oatmeal, peas and beans, may be dispensed with, while tea, coffee, chocolate and cocoa have no tissue-building elements, and act only to stimulate, in so far as they increase the amount of uric acid in the blood. Alcoholic beverages, for the same reason, have no place in the dietary of the person desiring to live an efficient life.

CHARACTER OF URINE IN MORE COMMON RENAL DISEASES AND DISTURBANCES

DIAGNOSIS	Amt.	Color	React.	Sp Gr.	Urea.	Uc.Acid	Cl.	Alb.	E. P.	A. P.	Sediment	Remarks	Explanations
Hyperaemia Active	500 to 1,000 Cc.	High	Acid	1.025 to 1.040	Rel. + Abs. n.	+	Rel. + Abs. n.	S.P.T.	+	+	Hyaline, Granular, and Brown Granular Casts. Few renal cells. Few normal blood cells.	Causes: Soluble and insoluble irritants. Toxines from fevers. T. B. Exposure to cold and wet.	Abs. . . . . Absolutely Rel. . . . . Relatively + ... Increased — . . . . . . Diminished n. . . . . . Normal Cc. . . . . Cubic Centimeter
Hyperaemia Severe Active	500 to 800 Cc.	Smoky	Acid +	1.030 to 1.040	Rel. + Abs. –	+	Rel. + Abs. –	L. t. to ¼ of 1%	–	–	Abnormal blood. Renal cells. Casts: Hyaline, granular, and brown granular, fibrinous.	No marked difference from urine in Mild Acute Nephritis.	
Hyperaemia Severe Active Convalescence	+ 2,500 Cc.	Pale to slightly smoky	Acid	1.013	Rel. – Abs. n.	+	Rel. – Abs. n	S.P.T. to Tr.	Rel. –	Abs. n.	Same as above plus fat cells which are in cells and adherent to casts.	A secondary disease always. Prognosis good if treated and not prolonged.	
Nephritis--Acute (Diffuse) First Stage	Few to 500 Cc.	Bloody or smoky	Acid	— 1.015 to 1.020	Rel. – Abs. –	+	Rel. – Abs. –	½ of 1% to 1½%	–	–	Sediment abundant, Brown Granular debris, much blood, Cordate renal cells from pelvis, Uric Acid crystals.	Causes same as active hyperaemia, viz. crystaline elements, toxines, drugs, mineral poisons. Headache, oedemia, nausea	Quantative estimate of Albumen
Nephritis--Acute (Diffuse) Second Stage	800 Cc. to 1,500 Cc.	Smoky	Acid	1.012 to 1.015	Rel. – Abs. –	+	+	¼ of 1% to ½ of 1%	–	–	Cordate cells, uric acid crystals, amorphous urates. Much same as 1st stage but less. Amt. of fat is sometimes large	Spoken of as fatty stage. Exacerbations likely to occur.	S. P. T.—Slightest possible trace. V. S. T.—Very slight trace. Tr.—Trace. L. t.—Large trace (includes 0.1%) ⅛ of 1%—Opaque, not flocculent. ¼ of 1%—Flocculent. ½ of 1%—Very flocculent. 1%—Milky. Above results with HNO_3
Nephritis--Acute (Diffuse) Third Stage	1,500 to 4,000 Cc.	Smoky to pale	Acid	1.015 to 1.020	Rel. – Abs. n.	—	Rel. – Abs. +	Tr. to ⅛ of 1%	n.	n.	Casts: numerous Brown Gran., few epithelial. Blood casts with fat. Renal cells, some fatty. Leucocytes. Abnormal blood.	Pyelitis may now become chronic with large amount of pus and small round cells. Casts disappear last.	
Subacute Glomerular Active Stage	300 Cc. to 600 Cc.	High and turbid	– Acid	1.015 to 1.030	Rel. + Abs. n. –	+	Rel. – Abs. – or n.	½ of 1% to 5%	–	–	Amorphous urates. Casts: Many fatty, few fine and coarse epithelial and Compound granular.	Formerly called Chronic Parenchymatosis. Fatty Degeneration. Cause may be delayed convalescence from Acute Nephritis. T. B. or Syph.	
Subacute Glomerular Passive Stage	800 Cc. to 1,500 Cc.	Pale to greenish	Acid	1.010 to 1.012	1% 10 to 15 Gms.	—	—	¼ of 1% to 1%	–	–	Amount and character same as active stage. Crystals of Uric Acid.	Uraemia. Retinitis. Frequent cardiac symptoms. Average duration including all stages, five years.	
Subacute Glomerular Atropic Stage	1,500 Cc.	Pale	Acid	1.002 to 1.003	—	—	—	¼ of 1% to ½ of 1%	–	–	Fatty casts, Waxy casts near death. Fatty renal cells, fatty crystals, cholesterine crystals.	Oedoemia in all stages. Retinitis. Kidney is a lump of fat. Usually dies before this stage.	
Chronic Interstitial Three Stages	1st=n.	n	n		n	n	n.	S P T.	n.	n.	Rarely hyaline cast. Renal cells.	"Early"-1st stage. Duration all stages	
	2nd=+	Pale	Acid	1.005 to	—	—	—	Tr. to ¼%	—	—	Granular casts with fat.	"Advanced"-2nd stage. 10 to 30 yrs.	
	3rd = 2,500 4,000	Pale	—	1.008 to	—	—	—	Tr. to ⅛%	—	—	Fat and wax casts.	"Later"-3rd stage. Sclerotic kidney.	
Chronic Diffuse	2,000 to 3,000 Cc.	Pale	Acid	1.012 to 1.018	Rel. – Abs. –	—	Rel. – Abs. –	⅛ of 1% to ¼ of 1%	–	–	Casts: Numerous Hyaline and Granular, few Fatty.	A mixture of Chronic Interstitial and Subacute Glomerular. Causes same as Interstitial.	
AmyloidDegeneration	2,000 to 4,000 Cc.	Very pale	Acid	1.012 to 1.018	Rel. – Abs. –	n. or	—	Tr. to ⅛ of 1 %	–	–	Small amount. Casts: Hyaline few, Gran. few, Waxy occasional, appear early. Rarely renal cells. No blood unless complicated.	Diag. difficult without clinical history. Causes: Syphilis, Tuberculosis. Suppuration of bones. Duration 5—10 yr.	
Pyelitis Acute	400 to 1,000 Cc.	High, smoky, bloody	Acid	1.025 to 1.035	Rel. + Abs. –	+	+ –	S. T. to ¼ of 1%	Rel. + Abs. –	Rel. + Abs. –	Chiefly normal blood, Numerous caudate cells. Pus free and in clumps. Crystals if cause. Casts as in Acute Nephritis.	Causes: Extension up or down, or calculus, or local irritant. Duration depends on cause. Caused by Gonorrhoea becomes chronic.	
Pyelitis Chronic	1,000 to 1,400 Cc.	Pale turbid	– Acid	1.010 – 1.015	Rel. – Abs. –	– –	– –	V.S.T. to L. T.	–	–	Degenerated pus free and in clumps. Small round and caudate cells. Casts from straight tubules. Search for crystals and T. B.	Usually disap'rs on removal of cause which may be obstruction of uretha. As from tumor, twist, Typhoid fever, Calculus pyelitis.	
Cystitis Acute	500 to 1,000 Cc.	Bloody or smoky	+ Acid	1.015 to 1.025 +	Rel. + Abs. + or –	+	+	Variable ¼ of 1% or less	+	+	Normal blood. Pus in clumps. Large amount squamous epithelium. Numerous small round cells.	Causes: Gonorr. Instrumentation. Exposure to cold and wet. Infection from typhoid bacilli. Traumatism. Retention of urine.	
Cystitis Chronic	800 to 1,400 Cc.	Pale to normal	Alk. or Acid	1.012 to 1.020	Rel. – Abs. –	– –	–	S.P.T. to ⅛ of 1%	–	–	Abundant. If acid, much of sediment is pus and epithelium. If alkaline, sed. viscid with amorphous phosphates.	Reaction may be acid in early stages, later frequently alk. Neoplasm may cause, or decomposing alk. urine.	
Prostatitis	500 to 1,000 Cc.	High or bloody	+ Acid	1.025 to 1.035	Rel. + Abs. –	+ –	—	S.P.T. to ⅛ of 1%	– –	– –	Pus free and in clumps. Blood in acute. Neck of bladder cells. Spermatozoa. Prostatic plugs. Epithelium. Crystals Calcium Oxalate.	In chronic form amount in 24 hrs. may be 1500 Cc., may not show renal disturbance. T. B., Cancer may cause.	
Hydronephrosis											Occasional Hyaline and Brown granular cast. Urine is free from pus.	Due to obstruct. of ureter, usually unilateral, other kidney doing work causes hyperaemia and urine characteristic.	
Diabetes Insipidus	5,000 to 20,000 Cc.	Pale to Watery	– Acid neutral	1.001 to 1.005	Abs. + Rel. –	+ –	+ –	Absent to S.P.T.	+ –	+ –	Very slight. Centrifugalization necessary. Squamous and small round cells. Rarely a Hyaline cast.	In Chronic Interstitial large amount with low s. g. may occur but low total solids and amount albumen and arterial sclerosis coexisting diagnoses.	
Diabetes Mellitus	3,000 to 10,000 Cc.	Pale to Watery	Acid	1.025 to 1.050	Rel. – Abs. +	– –	– +	S.P.T. to Tr.	– +	– +	Occasional hyaline cast, also Finely Gran. cast rarely. Rarely blood and renal cells. Sugar Spores on standing.	Presence of sugar most important. Quantity may be 20 to 500 Gm.	

I believe we should make more careful and frequent urinary analyses with our patients. To be sure, it takes much time and time is money.

Intelligent patients are willing to pay for prevention and realize that it takes time and skill to investigate.

In conclusion, I would make a plea for early institution of treatment, as most forms of nephritis, if properly treated early, get well, whereas if the favorable time is allowed to pass, it is impossible to repair damage done.

I have in my work in the past eight years used quite an accurate form of record, which is at once a record and a tabular view of cases. It is profitable to compare one case with another, as is easily done by this method at a glance. I use a loose-leaf system of binding the pages together, the whole inclosed in a cardboard cover. I have found also very convenient in my work a tabular view of the principal features of the urine in various renal diseases and disturbances, which is somewhat of an assistance in making a diagnosis. While it is impossible in any one case to give a specific picture of the urine, I think in this tabulation it will be found that a very good composite picture is presented under each separate heading. A page of my case record book is exactly ruled as this table, only in diagnosis column I put the patient's name.

Massachusetts General Hospital.

CLINICAL MEETING OF THE THROAT DEPARTMENT, MARCH 31, 1908.

Dr. H. P. Mosher showed:

THREE CASES OF DISEASE OF THE FRONTAL SINUS.

Case I. This case was operated upon at the Eye and Ear Infirmary about nine months ago. When the patient came to the hospital he gave a history of trouble with the left frontal sinus for two years. For two months there had been a fistula above the eye a little to the inside of the middle of the upper lid. This was discharging pus freely. The eye was pushed somewhat downward and outward. At the operation the condition which is so common in a mucocele was found, namely, a complete destruction of the floor of the frontal sinus and destruction of the anterior half of the os planum. There was nothing left for me to do except to clean out the anterior ethmoidal cells and to make a bridge. The frontal sinus was large, therefore I did not remove the whole of the anterior wall above the bridge, but left an overhang all round the operative opening. There is very little deformity. The opening into the nose has remained very large, and there is no discharge.

At the time of the operation and for two months afterward vision in both eyes was normal. From that time, however, up to now, whenever the patient looks strongly to the right he has double vision. He has no trouble when he looks straight ahead. This case shows that the removal of the whole of the floor of the frontal sinus flush with the rim of the orbit does not produce double vision. This point has been well demonstrated by many operations. The double vision in this case therefore is due to the contraction of the tissue about the healed fistula in the upper lid.

Cases II and III. I wish to show next two patients who have been operated upon within the last month and a half for chronic disease of the frontal sinus, antrum and ethmoidal labyrinth. In both the frontal sinus was of moderate size. In one I left an overhang about the opening in the front wall; in the other the bone was so thick that it was necessary, in order to expose the sinus properly, to take off all the front wall above the bridge. In the sinus where there was an overhang left, there is no sinking in of the skin; in the other case, however, already there is a slight depression. These two cases show, therefore, the great use of the overhang in preventing deformity.

These two cases illustrate another point. In one I did not take off all of the floor of the sinus, but took away only the internal angle about the naso-frontal duct. Already at the end of a month it is becoming hard to introduce a good-sized catheter into the sinus from the nose. In the second case all of the floor of the frontal sinus was carefully taken away. The opening from the sinus into the nose in this case has shown no signs of narrowing.

Dr. Mosher showed

AN ORAL ESOPHAGOSCOPE AND A MECHANICAL DILATOR FOR STRICTURES OF THE ESOPHAGUS.

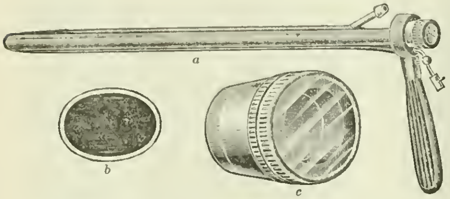
I wish to show two instruments for the esophagus. The first is an oval esophagoscope. The long diameter of the oval is three quarters of an inch. This is considerably larger than the usual tube. A tube of this size can be used easily in the adult esophagus after it has passed the cricoid cartilage. In the lateral position, however, it will readily pass the cricoid. The oval tube is made in two lengths,— a long tube for the deeper part of the esophagus and a shorter tube for examining the upper part. In order to spare the eye a short tube should be chosen whenever it is possible.

Each tube is fitted with a close fitting plug which has a glass end. With the plug the esophagoscope can be made air tight and at the same time the lumen of the tube can be seen through the glass window at the end of the plug. The object of stopping the tube in this manner is to enable the examiner to balloon the esophagus by forcing air into it through the drainage tube which runs along the side of the main tube. By doing this the lumen of the esophagus can be dilated at will. When, therefore, the examiner is in doubt as to the quadrant of the field in which the lumen of the esophagus is placed, he can help himself to find it by ballooning the esophagus with air.

Diverticulæ of the esophagus offer at times the greatest difficulties to the successful use of the esophagoscope. Either the observer fails to recognize the opening of the pouch, or the tube enters the pouch and, so to speak, gets lost in it. If the pouch is ballooned with air, it should be easier for the observer to realize that the tube is in the pouch; not only this, but it should be easier to tell the size and the position of the pouch. Further, if the tube is at the opening of the pouch, but has not entered it, the distention of the lumen of the esophagus and of the lumen of the pouch by air ought to be a help in telling which is which.

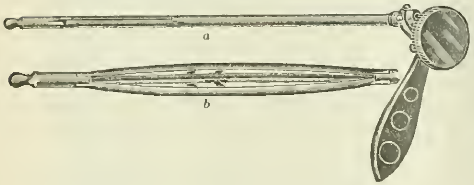
The second instrument is a mechanical dilator for strictures of the esophagus. It is patterned after the familiar urethral dilator originated by Kollman. It has two tips; the first is a bulb-like tip, which is perforated for a thread for those cases where a thread is used as a guide to the lumen of the stricture; the second tip ends in a short gum-elastic bougie. When the dilator is closed it measures 20 F. and it will expand up to 35 F. In order to use it, the stricture must first be dilated up with bougies to 20 F. In dilating a stricture with bougies, there is great downward as well as lateral strain upon the esophagus, but with the expanding dilator only lateral strain is exerted. This is more in line with the physiological dilatation which occurs in swallowing.

I have used the instrument but once. I saw the case upon which it was used, through the kindness of Dr. F. Cobb and he has followed the case along with me. The patient was a child two years and four months old. About four months ago the child drank some potash. Since then he has taken only milk. During this time he would have a week when milk would enter the stomach without difficulty and then have a week when a greater part of the milk would be regurgitated. Under ether it was found that there was a stricture at the cardiac end of the esophagus. This was dilated without much difficulty to 20 F. by bougies passed through the esophagoscope. After this the child took milk better, but could not keep down soft solids. Ten days later the child was etherized again, the lumen of the stricture brought exactly into the center of the esophagoscope, a 20 F. gum-elastic bougie passed and then the dilator. The esophagoscope was withdrawn sufficiently to allow the expanding mechanism of the dilator to be free of the tube, and then the dilator was slowly spread to 30 F. At this point there was great resistance and the dilatation was stopped. There was very little bleeding. After the operation there was no temperature reaction. Evidently, however, there was much swelling and edema at the site of the stricture, because the child even then did not swallow any better. Milk stayed down, but soft solids were regurgitated. Curiously enough the child could swallow dry cracker, but could not retain soft solids like custard. At the end of the second ten days the child was etherized for the third time and bougies up to 30 F. passed without the esophagoscope. This showed that the resiliency of the stricture had been effectively broken by the mechanical dilator. Since this time, bougies up to 32 F. have been passed every second or third day without ether and the child is now swallowing soft solids with ease. From now on the case can be managed without the esophagoscope and without ether.



Codman and Shurtleff.

Fig. 1. Oral Esophagoscope.
a. Tube with window plug in place.
b. Actual size of tube in cross section.
c. Actual size of window plug.



Codman and Shurtleff.

Fig. 2.

a. Mechanical dilator. The instrument is 23 inches long. The expanding mechanism is closed.
b. The expanding mechanism of the dilator open.

The instrument has a gauge to give the amount of dilatation, and on the handle rings are engraved to serve as a scale, so that the operator can always tell the amount of expansion which has been attained.

Two years ago I made the statement that certain strictures of the esophagus ought to be capable of dilatation after the manner of strictures of the urethra. This case shows that by means of the accurate diagnosis which can be made with the esophagoscope and by means of the accurate placing of bougies and of the dilator which the esophagoscope makes possible, such treatment of strictures of the esophagus is now feasible and practical.

Dr. Mosher reported

THE TREATMENT OF ATROPHIC RHINITIS WITH VACCINES.

For the last two months I have been trying, with the help of Dr. Kerr, the effect of the mixed vaccines of the staphylococcus albus, aureus and citreus upon atrophic rhinitis. At first the vaccine was furnished by Parke, Davis & Co., and later, through the kindness of Dr. Hartwell, by our own laboratory. Some ten cases have been regularly treated and followed. No attempt has been made to make a vaccine from the nasal secretion of the individual patient. Neither has the opsonic index been determined. In a recent article, Dr. Hartwell stated that in treating suppurative conditions like boils and carbuncles the preparation of an individual vaccine and the following of the index was not essential. At the time that I read this article I had a case of pustular acne associated with atrophic rhinitis. With this observation in mind, I began the use of the vaccines on this case and then tried them in this empirical and very rough way on the cases which make up this little series.

Each case was started on a dose of 400,000,000 of the mixed bacteria and then the dose was pushed up to 900,000,000. Most of the patients were given an injection twice a week. The only symptom of an unpleasant character which could be charged to the vaccines was a feeling of general lassitude with some headache, which lasted for twenty-four hours. Few of the patients, however, complained of this. None of the patients had chills. The injections have been made in the skin of the back and of the flanks. Care has been taken not to use skin which has been immunized by a previous injection.

As the injections have been carried on only a very short time this must be considered a preliminary report. The results are hopeful and suggestive. The results are as follows: The headache, which so many cases of atrophic rhinitis complain of, has improved and the fetor has lessened or disappeared. The crusts have become smaller and the patient can blow them out more easily. The mucous membrane of the nose has become more moist. Although the majority of the cases have been improved, the improvement has not always been uniform. The first few injections seem to cause the most marked change.

So far the most striking effect of the vaccine has been upon the mucous membrane of the pharynx. In one noteworthy case, where the posterior wall of the pharynx was covered with a solid layer of thick green crusts, the first injection almost entirely cleared this away. Since then the mucous membrane of the pharyngeal wall has gradually become moist from the outer edges toward the center. To-day the pharyngeal wall back of the soft palate has only a thin cobweb-like crust. Below there is no crust. This is a case of very long standing. In two other cases the pharyngeal wall has in a great measure undergone like changes.

Further study is necessary in order to find out if the improvement which these cases have shown is permanent. I am aware that an equal amount of improvement can be obtained in cases of atrophic rhinitis by other methods of treatment. Since, however, the vaccine treatment is now being tried in so many diseases associated with suppuration, it is of interest to know that it will accomplish something in atrophic rhinitis. Should the improvement which has been shown by these cases prove to be constant or permanent the next step, of course, is to prepare an individual vaccine for each patient and to regulate the dose by following the index.

For the first few weeks these patients were told not to use the ordinary nasal wash which they had been using (borax, salt and bicarbonate of soda). Since then they have been allowed to use it. No other treatment has been used with the injections.

In connection with this question of the effect of the injection of vaccines upon atrophic rhinitis, it is interesting to recall that in the early days of the use of diphtheria antitoxin, it was used for atrophic rhinitis and certain results were obtained with it. These did not prove to be sufficient to cause its continued use. The result may be the same with the vaccines.

In one of these cases, the case which had such marked crusting of the posterior pharyngeal wall, and in which this crusting cleared up so markedly with the mixed vaccines, the bacteriological examination of the nasal secretion showed, as the predominating bacteria, the bacillus mucosus capsulatus and the pneumococcus. Nevertheless, this case improved in a striking manner under injections of a vaccine made from the ordinary pus bacteria. In order to account for this it is necessary to assume that the injections stimulated the resistance of the cells and so brought about the improvement. The next step is to try this case upon a vaccine made from his own nasal secretions in which the bacillus mucosus capsulatus and the pneumococcus predominate. Such a vaccine is now being made.

Dr. J. L. Goodale reported

THE TREATMENT OF SUPPURATIVE SINUSITIS WITH VACCINES.

During the past winter about eight cases of suppurative sinusitis have been treated for me by Dr. Mark W. Richardson, with vaccines, chiefly staphylococcus varieties and pneumococcus. Some of these cases showed atrophy, probably dependent upon the suppuration, with marked crust formation.

A certain number of cases of ethmoiditis with purulent discharge have exhibited diminution of the purulent elements of the discharge, although no conspicuous alteration in the total quantity of material expelled was evident. Since, however, the fetid character of the crusts in these conditions is directly dependent upon decomposition of pus from the sinuses, it is evident that a diminution in this with relative preponderance of mucus is of direct benefit. It has seemed to me that some of these cases exhibited also a moister pharyngeal mucous membrane. This would also be in line with our anticipation since the replacement of dry scabs in the nose by a moister nasal surface would permit of more evaporation of water from the nasal passages.

Dr. A. Coolidge, Jr., reported a series of cases of

EMPYEMA OF THE ANTRUM

in which the symptoms which commonly point towards the antrum — unilateral discharge, polypi and sensations on the corresponding side of the face — were absent. In 3 cases the symptoms were those of vaso-motor rhinitis of long standing, — periodic sneezing, watery discharge and other symptoms of nasal irritation. The connection between these symptoms and inflammation of the antrum has been described by Schadle. Two somewhat similar cases were recently reported in this clinic. (See Vol. clviii, p. 193, of this Journal.) In all the cases simple washing of the antrum relieved the symptoms, even where the empyema is not yet cured. In one case the patient complained of post-nasal catarrh and also of a marked degree of mental apprehension, which had persisted for four months. One antrum was found full of pus, and cured by the extraction of a tooth root, with immediate disappearance of the nervous symptoms. In one case with post-nasal catarrh, there was daily headache, which disappeared immediately on washing the antrum, apparently the only sinus affected. In one of the vaso-motor cases the affected antrum showed a better light on transillumination than the opposite one, which was clean. As a rule, however, transillumination is a valuable guide, and has pointed out the antrum as the source of trouble in cases otherwise obscure. It should be tried as routine in all cases with symptoms of nasal irritation and post-nasal catarrh.

DR. H. A. BARNES reported

A CASE OF VINCENT'S ANGINA.

Smears and sections of tissue taken from a case of ulceromembranous tonsillitis (Vincent's Angina) were shown for microscopic examination. Both showed the bacillus fusiformis in association with a spirillum, which organisms, growing in symbiosis, are supposed to be the specific cause of the lesion.

The association of fusiform bacilli and spirilla in ulcerative lesions was first noted by Rauchfus in 1893, when he demonstrated their presence together in cases of ulceromembranous angina. The next year Plaut reported similar findings from the same sort of lesions. In 1896 Vincent found fusiform bacilli and large spirilla in certain cases of hospital gangrene and in anginas of an ulcerative type. Since that time a large number of reports have been received corroborating the bacteriologic findings of the earlier observers; so that to-day the occurrence of these two organisms, in predominating numbers, in ulceromembranous lesions of the throat and mouth, is quite generally accepted as diagnostic of a definite clinical entity, the so-called Plaut-Vincent's or Vincent's Angina.

The fusiform bacillus, either alone or in association with a spirillum, has been found in quite a variety of lesions. Noma, hospital gangrene, fetid abscessses in or about the mouth or in other parts of the body, gangrenous ulcers about the genitals, appendicitis, bronchiectasis, form a group of pathological processes sufficiently diverse to show the widespread occurrence of the organisms. Angelici states that the bacillus is present in various morbid processes throughout the alimentary tract. Both it and its accompanying spirillum may be present in small numbers in any normal mouth.

The bacilli appear as long slender rods with pointed ends and, as their name implies, are somewhat tapering from the center to the extremities. Their length is usually from 6 to 12 microns. They stain well with carbol fuchsin and are decolorized by Gram. At times the stain is taken unevenly, so that alternate stained and unstained sections appear, giving the appearance of spore formation. There are, however, no spores. The organisms are non-motile.

The associated spirilla are long, delicate, corkscrew-like organisms, with from 3 to 8 turns. They stain uniformly, less intensely than the bacilli, and may easily be overlooked, especially in sections of tissue. They are sometimes very actively motile; again only slightly so.

The fusiform bacillus is an anaërobe and like most anaërobes produces a very foul odor in its growth. This very disagreeable quality of ulcerative and necrotic lesions of the mouth and throat may be due to the presence of this organism.

That these two organisms, growing in symbiosis, are the specific etiological factor in ulceromembranous angina and stomatitis has not been proven, since as yet no pure cultures of the spirillum have been obtained. All inoculation experiments with pure cultures of the bacillus are inconclusive, though Ellerman and others have produced abscesses in rabbits with such cultures. Mixed cultures give no more satisfactory evidence, since all such cultures contain cocci and other bacteria. That smears from the ulcerations show the two organisms, not in pure cultures, but in predominating numbers, in these cases, is suggestive; and this suggestion is greatly strengthened by the finding, as in the slide under the microscope, of these organisms in the advancing line of necrosis in the excised tissues.

Clinically the disease is characterized by the appearance of one or more ulcers usually confined to one tonsil and the neighboring faucial surface; but both sides may be affected. The ulcers are usually quite small, though they may be so extensive as to cover the whole tonsillar surface. They are covered with a grayish-white pseudo-membranous exudate, which is easily removed, leaving a raw bleeding surface, with raised edematous edges. The membrane immediately re-forms. The depth of the ulcers varies from very shallow to deeply eroding; and cases are reported in which the whole tonsil has sloughed away in the process. There is moderate submaxillary enlargement and tenderness and only slight constitutional disturbance.

The lesions are apt to be confounded with diphtheria; therefore both smears and cultures should be taken as the fusiform bacillus and its accompanying spirillum are anaërobic and cannot be cultivated by the ordinary methods. For this reason it is probable that many of these cases are overlooked as cultures only are usually depended upon for diagnosis in cases of suspected diphtheria.

The membrane usually clears up at the end of a week or ten days under simple tonic treatment and a boric acid mouth wash and gargle. Chlorate of potassium is said to be a specific. In the case of a house officer of this hospital, however, who had a marked gingivitis and stomatitis sharply limited to one side and characterized by pin-head ulcerations covered with a membranous exudate in which the bacillus fusiformis and the spirillum were found, the chlorate was without effect. The lesions rapidly subsided with the use of a 1-10000, bichloride of mercury wash.

DR. BARNES showed slides demonstrating the

CAPSULE OF THE TONSIL.

These slides were prepared from tonsils excised "in capsule." They were sectioned both longitudinally and in cross section and stained with the Mallory connective tissue stain. The fibrous strands of the capsule appear in deep blue; muscular fibers are stained bright red.

The capsule of the tonsil is developed from the faucial mesenchyma and represents the tunica propria of the mucosa backed by the less compact submucosa, with which layers of the faucial mucous membrane it is continuous. In other words, the tonsil is to be regarded as a collection of lymph nodules in (not under) the mucosa. It differs from the simple lymphoid nodules scattered throughout the buccal and pharyngeal mucosa only in the complexity of the arrangement of its nodules around a series of branched tubular prolongations of the epithelium, the crypts.

The capsule completely encloses all parts of the tonsil not covered by epithelium. In these sections it appears as a compact layer of fibrous tissue, with numerous elastic and striated muscle fibers interspersed. A number of trabeculæ of the same composition, except that in the human tonsil muscular fibers are only occasionally seen, are given off from its internal surface, which run into the substance of the tonsil between the crypts and separate it into lobes. The muscular fibers are said to be derived from the superior constrictor and from the muscles of the faucial pillars. Those that lie in immediate proximity to these muscles doubtless are derived from that source; but the striated muscle fibers sometimes seen in the larger trabeculæ of the tonsils of man and which are numerous in all the trabeculæ of the tonsils of some animals, notably the cow, hardly can be accounted for in this way. I have found the capsule to be somewhat thinner than it has been reported to be by Zukerkandl and by Grober, who state that it is 1 mm. in thickness. In none of my specimens is the capsule over ⅓ mm. thick, except at those points near the pillars where the dissection was accomplished with a cutting edge.

These sections show with what thoroughness and neatness the tonsils may be removed by this method.

Also slides demonstrating

EPITHELIOMA OF THE FAUCES,

tissues taken from a rapidly growing papillary growth at the base of the tongue and around the anterior faucial pillar. The patient was a man of fifty years. Microscopic sections show a tissue indistinguishable from an ordinary benign papilloma, except that a large number of mitotic figures in the nuclei suggests a rapid recent growth. The age of the patient, the rapidity of the extension of the neoplasm, and the fact that in certain regions of the body, notably in the bladder and the pharynx, epithelioma often assumes a papillary form, arouses the suspicion that the deeper parts of this growth would show a malignant structure.

TUBERCULOSIS OF THE TONSIL.

These tonsils were excised for the ordinary tonsillar hypertrophy of childhood. No suspicion of tubercular disease existed, and the condition was discovered only when the microscopic examination was made. There was no cervical glandular enlargement and no history of tuberculosis elsewhere. Sections of both tonsils show numerous small tubercles, entirely cellular, with no caseation. They are evidently of recent origin. These sections illustrate well the difficulty one often experiences in finding tubercle bacilli in undoubted tubercular tissue. After a search of several hours of many sections, cut at different planes, I have been able to find only one bacillus.

TONSILS EXCISED FOR THE RELIEF OF CHRONIC JOINT INFECTION.

Patient of Dr. Joel E. Goldthwait and of Dr. Harris P. Mosher. Age about fifty years. The tonsils were dissected out in capsule. Sections show: (1) An unbroken capsule which fact eliminates the tonsils as foci of future infection. (2) A marked increase in the fibrous tissue, with a corresponding decrease of the lymphoid elements. (3) A very thick epithelium lining the crypts, backed by an unusually thick propria. If we examine the tonsil of a child we find that the epithelium of the crypts is extremely thin, so thin in many places that one has to look carefully to see it; and immediately beneath this the fibrous tissue consists only of the cobweb-like mesh of the recticulum of the lymphoid nodules. Such a structure presents a very weak front to bacterial invasion whenever the immunizing forces of the individual are for any reason impaired. *Per contra*, the solid wall of epithelium and dense fibrous tissue which lines the crypts of these tonsils would seem to render toxic absorption very improbable.

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Reports of Societies.

AMERICAN CLIMATOLOGICAL ASSOCIATION.

The twenty-fifth annual meeting of the American Climatological Association was held at Harvard Medical School, Boston, June 9 and 10, 1908.

Dr. Thomas D. Coleman presided, and in his introductory address said that much of the society's early inspiration and much of its enduring works have come from Boston. The last previous meeting held in Boston was in 1889. Dr. Coleman paid a tribute to Harvard University and declared that the stately medical buildings have no equal on the face of the earth.

Attention was called to the need of study of all diseases that are influenced or eradicated by climate, hydrotherapy and hygiene. Hook-worm disease, malarial disease and typhoid fever were referred to. Uncinariasis was said to affect the poor whites in the South and negroes much less frequently. The relative immunity of the negro was accounted for by the thickness of the epidermis of the soles of the feet, as this is at present believed to be the chief avenue of infection. The remedy is simple. Two doses of thymol are usually sufficient to effect a cure after its administration.

Dr. Charles C. Browning, of Monrovia, Cal., read a paper on

THE EFFECT OF CLIMATE CONDITIONS ON IMPORTANT SYMPTOMS IN TUBERCULOSIS.

Monrovia being a short distance only from Los Angeles, the meteorological data used were taken from the latter station. The author showed graphically on a chart the barometric pressure, relative humidity, maximum and minimum temperature, precipitation, direction of wind, wind velocity and state of the weather as regards cloudiness. He considered barometric pressure and atmospheric temperature in relation to hemorrhage and bodily temperature. The results of observation of 239 patients were collated and continued over four hundred and eighty-six days. Seventy-seven hemorrhages were recorded and were usually in relation to relatively low barometric pressure. Dr. Browning suggested the advisability of keeping the patients with a known tendency to hemorrhage quiet during rapid changes of barometric pressure and suggested taking the blood pressure at such times, having found it frequently high. Extremes of atmospheric temperature have more or less influence on the temperature of the patients.

Dr. Samuel A. Fisk read a paper entitled

A SEARCH FOR A SUITABLE CLIMATE,

continuing a paper of similar title read a year previously. The author said that he went to Colorado twenty-eight years ago a consumptive, worked hard at his profession, gained forty pounds in weight and he regards himself and is regarded by others as cured of this trouble. He referred to published descriptions of his own case which appeared in the Boston Medical and Surgical Journal, July 31, 1884, and October 25, 1894, and recorded himself as having been cured of diabetes insipidus. An obscure nervous trouble supervening led him to leave Colorado and seek the sea level. Of all the places visited Nantucket seemed best adapted to his nervous trouble during the summer and a station in Massachusetts less than one hundred miles from the sea and elevated about 900 feet for permanent residence.

Dr. Charles D. Alton read some

NOTES AND OBSERVATIONS ON CLIMATE AND HAY FEVER.

He used the term "hay fever" as applicable to those attacks of annual recurrence which are not due to palpable nasal changes. He considered it a disease of city life, rarely found among those who are native residents in localities sought for cure or immunity by city sufferers. There is a varying degree of impress upon the nervous system, due possibly to hereditary causes, or by business worry of a noisy bustling city, dietetic or social errors and general nervous tension. Dr. Alton has never seen a case of simple uncomplicated hay fever unchecked by transportation to a virgin forest where trees, shrubs and ground plants are primeval, a forest essentially differing from the second growth woods of our settled rural districts. The latter growth the author has known to bring on attacks which yielded on returning to the virgin forest.

Dust, as an irritant, is a cause of hay fever because of the toxic pollen with which it abounds. Old time resorts for hay fever sufferers no longer give immunity because the grassy roadway has become a dusty street and railways bring smoke and gas. Mackinaw was once a refuge, but now excursion boats and the extended streets have ruined it in this regard. Petoskey and Harbor Springs, in Michigan, have suffered through the cutting of the extensive forests which stretched southward for 300 miles. The sandy, pine-bearing lands over thousands of acres have become a wind-swept desert waste growing only dwarfed shrubs and pollen-shedding plants. Prosperity has robbed these lands of their healing balm. The immune localities of the present day are not easily reached by the comfort-loving, effort-sparing people of the present day. An ideal resort was described. It is on the rocky shore of a secluded mountain lake protected from the north and west, where camp life can be enjoyed and where there are no roads.

The native flowers such as Solomon's seal, trillium, bunchberry, oxalis, clintonia are not irritating, but composite flowers, such as fireweed, golden rod, devil's paintbrush, daisies and many others which follow in the second growth of timber are objectionable. The thinness of the air at a moderate elevation of 2,000 feet is a cause of coryza when there is full exposure to the water at noon, and Dr. Alton cautions against boating between eleven and three o'clock when one receives not only the direct heat of the sun, but its lake-reflected light as well. Steamer trips at sea were condemned; a sailing vessel may answer better if hay is not carried. The trip up the Great Lakes may be of value to some. North of the St. Lawrence River there are still some places free from the lumbermen's encroachments and so also in the heart of the Maine forest.

DISCUSSION.

A Member: I do not like to cast any reflections on the virtue of Dr. Alton's paper, but I would like to quote one or two instances under my own observation. The only time in which I personally have any suggestion of anything similar to hay fever is when I go into a thick pine forest, or virgin pines. I have begun to have congestion of the ocular mucosa and a very definite stuffiness in the nose, and it is absolutely impossible for me to sleep on a pineneedle pillow without having these symptoms.

There are several points well taken, but we have to bear in mind always the question whether it is altogether the pine forest that is a factor.

Dr. Delancey Rochester: I want to second the remarks of the last speaker about its being a city complaint. My experience in Buffalo has been more or less wide in dealing with people suffering from the disease in question, and I do not quite understand how the writer can put it down as primarily a city disease. I have found that the chief factor in taking care of these cases, in addition to any climatic treatment, is that of elimination by their bowels, kidney and skin, and also a limit to the food they are allowed to eat. Most of these patients eat too much food and things which they ought not to eat. When these conditions are looked after the climatic treatment is of secondary importance.

Dr. Charles L. Minor: What Dr. Rochester says is in a sense true, but we can divide our cases into two classes. First, those which seem to be chiefly constitutional in origin, and second, those chiefly local. Many cases are wondrously benefited by such constitutional treatment and washing out of the system as Dr. Rochester advocates, and these cases almost always give a gouty family history, but there are many cases in which the cause seems to be purely local, and in these I have found constitutional treatment a dismal failure.

Dr. J. A. Miller: While we are on this subject I will tell my personal experience with hay fever and asthma. The only time I suffer much is when I am in the Adirondacks, and only in one particular locality. I found, curiously enough, that by going back a hundred yards or so from the cottage where I was staying I was much better; also that by moving from the lower front room to the upper room at the back of the cottage I became absolutely free from this hay fever with asthma.

This seems to me to be one more inexplicable incident in the history of this curious disease.

Dr. Alton closes: I think I may have a little feeling of gratification that I have stirred up a discussion, but one may expect it on a topic of this kind which is so complex. Of course, some of us who observe in one point see certain results, we see a certain class of patients perhaps, and in another place under different conditions there may be another class of patients, so we get different results. The one thing I remarked in my paper was that the etiology of this disease will call for long and continued study before we can arrive at any more definite causes and effects than we have at the present day.

Dr. Jay Perkins, of Providence, read a paper on the

WORK OF THE LEAGUE FOR THE SUPPRESSION OF TUBERCULOSIS, OF PROVIDENCE, R. I.

This dates from 1900 when a clinic for the treatment of pulmonary tuberculosis was started as a part of the Rhode Island Hospital work. The work began by co-ordinating charitable work in Providence so that tuberculosis work was not divided among several societies making appeals for aid. St. Joseph's Hospital established a farm a little outside the city for tuberculous patients in any stage. In October, 1905, the State Sanatorium at Wallum Lake was opened. The league has sub-committees on finance, education, lectures, relief, research and statistics, factories and executive. The chairman of the executive committee is the secretary of the State Board of Health. The exhibit of the National Association for the Study and Prevention of Tuberculosis had a total attendance of 36,300. This stimulated the work of the league. Four nurses are employed for general work and a fifth in the day camp. These nurses instruct the patient and report to the secretary of the league the home conditions and what help is needed. They also bring to the clinic other members of the families so that suspected cases are examined. They follow up cases and persuade them as far as necessary to go to the sanatorium. The league reports on applicants to the State Sanatorium. St. Joseph's Hospital is being enlarged for advanced cases. The State Board of Health furnishes paper spit cups and Japanese paper. The city Superintendent of Health and Overseer of the Poor are interested and effective members of the league. An ordinance requiring notification has been passed. An inspector visits all cases reported to him not under the care of a regular physician, or which the regular physician is willing to have visited. If desired they are referred to the nurses of the league. An effort is made to get into close personal touch with the sick and those dependent on them. The members of the finance committee are prominent citizens who have the confidence of the community. A day camp has been opened on the grounds of the Rhode Island Hospital where a dinner and morning and afternoon lunch are generously provided.

Dr. Perkins also described the establishment of the Providence Fresh Air School, the first of the kind in the United States. An abandoned schoolhouse was used. One side was partially removed and glass windows extending from near the floor to the ceiling, so arranged as to swing upward toward the ceiling, replaced the wall. This meets the needs of tuberculous children. During the recess in the middle of each session a cup of hot soup was furnished each pupil throughout the cold weather. Everything is provided by the City School Department except the sitting-out bags and a few extras. The school has been a success.

DISCUSSION.

Dr. Frederick I. Knight: There is going to be very soon a pretty serious problem proposed in regard to the education of tuberculous children. It came to me the other day in this way: A child was brought to me who had evidently had a chronic catarrhal pneumonia but which was undoubtedly of tubercular origin. The child was about fourteen years of age, and I did not know for what purpose she was brought to me, but the question was put categorically, her mother saying, "Now, doctor, is there the least danger in that child's going back to school?" I said, "I think the disease has had its course; the child has no expectoration now; and it would seem to be safe to let her go back, but I cannot say what might happen. If she should get some new disturbance the expectoration might come back, but I cannot say. Why do you ask me?" "Because one of my neighbors heard the child cough and in some roundabout way found that there was a suspicion of tuberculosis and induced the board of health to refuse her attendance at school. The city owes my child an education, and I want her to go back to school."

What happened I do not know, but that question is coming up, and what are we going to do? When is it safe for a child to go back to school? Those children have got to be provided for in some way by the public treasury.

Dr. Roland G. Curtin: There may be a great danger in these cases of so-called cured tuberculosis. I recall a case of a gentleman who was a friend of mine. One day I met him and asked him how he was getting on. He said he had been married three times. I said, "How is that?" and he replied, "My wives all died in about a year and a half or two years. I can't get married any more, the women are afraid of me."

He had a chronic disease of the internal ear, probably tuberculous, and he probably gave the disease to each of his wives. In addition to that I have seen three or four cases where persons are supposed to have been cured, and when they are married the wife has taken the disease promptly and died.

Dr. Carroll Edson: The success of this school, as Dr. Perkins reports it, would suggest one valuable idea. Rather than go to the expense of establishing these open-air schools for the children who are broken down, it would seem to me a good thing if a little more attention were paid in all our cities to the ventilation of our schools so that the children who are unfortunate enough *not* to have tuberculosis may get the benefits of fresh air.

Dr. Perkins: There is one thing which I would like to add in view of Dr. Bowditch's paper, as to the value of sanatoria. There is a failure of sanatoria to accomplish what has been claimed for them. Now the work of a league such as ours is aiming to accomplish that which sanatoria have failed to do — to prevent the spread of the disease. I do not believe that sanatoria do as much to prevent the spread of tuberculosis as has been claimed. There are so many cases apparently cured which break out afterwards. They go back home again and unless they are properly supervised they are going to spread it for a longer period than if they had not gone to the sanatorium. The work of a league such as ours should be to prevent that. We have got to treat these patients in their homes, and it is the work of the leagues to do it, and that is what we are aiming at chiefly. I think we are getting a comparatively good hold of the cases in Providence. As far as statistics go, the number of deaths from tuberculosis is on the increase. I think, however, it is due to more accurate diagnosis of the cases. If the cases were followed up it would be found that many deaths due to tuberculosis were filed otherwise.

In a case recently we came across a family where the mother had advanced tuberculosis and slept in the same bed nights with four children. Her husband worked during the night and came home days and slept in the same bed that had been used all night. When we get hold of cases like this it is our work to prevent the spread of the disease, and I believe it is of extreme value.

Dr. E. R. Baldwin, Saranac Lake: I have had the privilege of seeing Dr. Perkins' work and I would like to say that the open-air school interested me more than anything else, and is a distinct success as a help to the children. It was very interesting to see that they could stand so much cold weather and keep on with their studies, but of course the hot lunch was a very good thing. It would seem as if this work should be done in other cities. It has been found that about 15% of the average city school children are infected with tuberculosis. This is particularly true in the city of Cleveland and other large cities. It would seem that there was a large field for the open-air school work and I am very glad to congratulate Dr. Perkins on pushing the matter.

Dr. E. O. Otis, of Boston, read a paper on

SOME NEWER MOVEMENTS FOR THE PREVENTION AND CONTROL OF TUBERCULOSIS IN THE STATE OF MASSACHUSETTS AND THE CITY OF BOSTON.

In Massachusetts the first active step in the campaign was the bill to establish a state sanatorium. This was in 1895. In 1898 the buildings were completed and now shelter 350 patients and the sanatorium costs the state from $150,000 to $200,000 a year. It is the first and largest state sanatorium. In 1907 the notification law was passed and the state was divided into fifteen health districts with an inspector, a physician, in each district. In the same year a consumptive hospital commission was established, an appropriation of $300,000 for three new state hospitals, of 150 beds each, for advanced cases was made. An expectoration law was passed in 1906 and amended in 1907, and up to April 1, 900 arrests have been made for its infringement. By another act persons suffering from tuberculosis are relieved from classification as paupers by reason of any expenditure made for their relief from this disease by their town or the Commonwealth.

Cuspidors must be placed in factories, one for every five or less males, and one for every twenty females. This is the minimum. In 1908 an act was passed requiring instruction upon tuberculosis and its prevention in the public schools of the state and in the fulfillment of this law a committee of physicians is at work under the State Superintendent of Instruction preparing a manual on tuberculosis for the use of the teachers in the public schools. Tuberculosis legislation has evidently become popular in this state.

The City of Boston in 1906 appropriated $290,000 for a consumptive hospital department which should receive advanced cases of tuberculosis. Fifty acres of land at Mattapan, near Boston, have been purchased. Popular pamphlets, tin placards and other means of instructing the public regarding tuberculosis have been issued. A tuberculosis clinic has been established, with eight trained nurses, a supply of milk for needy patients and a system of examination of school children.

All Boston cases discharged from the Rutland Sanatorium are referred to this out-patient department for future supervision. The cases reported to the Boston Board of Health in 1907 numbered 2,543. The number of deaths was 1,138 and disinfections for tuberculosis, 2,015. The Day Camp at the House of the Good Samaritan was described; tuberculosis classes, devised by Dr. J. H. Pratt, were commended. Three such classes are carried on under the auspices of the Massachusetts General Hospital. Measures for preserving the teeth in children have been adopted. The newly formed Dental Hygiene Council, representing the dental societies and profession in Massachusetts, is in charge of this work of prophylaxis in accordance with the system originated by Professor Jassen, of Strassburg, Germany, where children from three to six years of age are obliged to undergo dental treatment if needed. The work of the Boston Association for the Relief and Control of Tuberculosis was described, especially as regards the after-care and supervision of discharged sanatorium patients and tenement inspections.

DISCUSSION.

Dr. Roland G. Curtin: Doctors are sometimes afraid to put down tuberculosis as the cause of deaths on account of the peculiar laws of industrial insurance companies. Doctors have told me that their practice has been actually destroyed from putting down tuberculosis as the cause of death.

This may be in part a cause of the apparent diminution of the deaths from tuberculosis.

Dr. Frederick I. Knight: I would like to speak a word about the tendency to exaggerate the number of cases which are reported cured after having been in a sanatorium a few months. Now I do not think that, as a rule, physicians, particularly the physicians of sanatoria, are guilty of using these expressions so much as the public are. In one of this morning's Boston newspapers there is a claim made by a layman who is very much interested in this tuberculosis problem, that in a tuberculosis clinic of cases in all stages, 75% of the patients were cured. Now just compare that with the interesting and moderate report of Dr. Miller. That is what is doing this work a great deal of harm. Claims of this kind are due largely to the press and to the over-enthusiastic public.

Dr. Minor: I think this question of relapse of sanatorium cases is very largely, if not altogether, a sociological problem. When we realize the conditions of the homes of the patients of the lower classes who go to our state sanatoria and the nature of the work with which they have to support themselves, we could not for a moment suppose that they could return from the sanatorium to such conditions of life and not relapse. If it were possible it would be contrary to all that physiology and pathology teach us. I cannot imagine that the sanatorium would ever exist which would make a man proof against all relapse under these conditions. He may leave with apparent cure of his process, but not with immunity against relapse if he returns to the filthy conditions from which he originally came; the social side of the question is to improve the housing of the poor and doing away with the filthy tenements before the sanatoria can have any effect at all.

Dr. A. K. Stone: Dr. Darlington has spoken of these yellow signs that we see everywhere. They were imported direct from New York with the New York vernacular attached. It worried many of us Bostonians a good deal when they were first presented at the meeting of the National Association in Washington. It sent the shivers down our backs. They were imported, however, by one not a born Bostonian. I quite agree with Dr. Darlington as to the general appearance.

In regard to what Dr. Brannan said regarding dental examinations, I should like to say that at the House of the Good Samaritan we have had a dental examination and treatment for the past ten years at least.

Dr. LeFevre: My attention has been called to the relation of tuberculosis patients to the industrial insurance question. I found in New York recently that people do not like to become tabulated as tuberculous individuals for fear that if death occurs their insurance money will be cut down. This was first called to my attention in the clinic and I found that this fear is widespread, especially in large cities, where nearly every family is insured more or less. It is a serious proposition in relation to the laws that are now being put in force to compel notification of cases of tuberculosis. These patients should be protected, and added burdens should not be imposed on them. If industrial insurance companies are allowed to cut down insurance of those who contract tuberculosis, people will not seek an early diagnosis.

Dr. Otis closes: In answer to the question as to the assistance rendered by the profession in this city in the tuberculosis campaign, I should say that a few members have been very active, particularly those who are especially interested in tuberculosis; the mass of the profession, however, so far as my observation goes, are more or less apathetic upon the subject. On the whole I think the laymen lead in the campaign.

The subject of supervision of discharged sanatorium patients and providing proper employment for them is a very serious and insistent question, as has been remarked; unless the arrested case is, in some way, looked after, relapse is likely to occur, as we have observed with unpleasant frequency. Unless some way is found of obviating this all too frequent result, much of what is expended in the sanatorium in procuring the arrest or improvement will go for naught. The plan I have outlined in my paper, of having a social worker or investigator stationed at the sanatorium to follow up the discharged cases, I hope may be fruitful in results. Having established the sanatoria for arresting the disease, we must now take the next logical step and provide some method of maintaining the arrest or cure.

Dr. John W. Brannan, of New York, read a paper entitled

OBSERVATIONS ON THE CALMETTE AND VON PIRQUET TUBERCULIN TESTS IN CHILDREN.

In the twelve months that have passed since these tests were proposed there have been various estimates of their diagnostic value and their safety. Dr. Brannan's studies were made at Sea Breeze Hospital at Coney Island, N. Y., on 46 children, the majority of whom were in the acute stage of surgical tuberculosis. Dr. Brannan used the sterile normal salt solution prepared by Dr. Park from precipitated tuberculin in the laboratory of the New York Department of Health. He used the method of Baldwin, using first ½ per cent solution to avoid excessive reaction. In case of a negative result he then used a 1 per cent solution in the other eye. Of the 46 cases 36 gave a positive result, the reaction taking place in from six to forty hours. The reaction varied from simple redness of the caruncle and lids to deep injection of the entire conjunctiva with edema of the lids, photophobia and well-marked secretion. The promptness and intensity of the reaction seemed to bear no relation to the severity of the tuberculous process in the individual. There were no ill results. In not a single case did any alarming symptoms develop nor did the children complain of the treatment.

The von Pirquet test was used in 30 cases, using the crude tuberculin prepared by Dr. W. H. Park diluted to 25%. All but three reacted positively, the reaction appearing in from sixteen to sixty hours. In about one half of the cases it was accompanied by constitutional symptoms, such as headache, slight nausea and a rise of temperature to 100° or 101.5° F.

Dr. Brannan considers the two tests of about the same diagnostic value but with a greater safety in favor of the von Pirquet test, when once the proper dose of the latter is found. The latter carries with it no danger to any organ, and the slight fever, nausea and headache are of only two or three days' duration and do not materially disturb the patient.

Dr. Harry Lee Barnes, of Wallum Lake, R. I., read a paper on

THE USE OF TUBERCULIN AS A DIAGNOSTIC AGENT IN TUBERCULOSIS,

to appear in a subsequent number of this Journal.

Dr. James Alexander Miller, of New York City, read a paper on

TUBERCULIN AS AN ADJUNCT TO THE HOME TREATMENT OF PULMONARY TUBERCULOSIS.

This paper is the result of studies and investigations made originally under the supervision of Dr. E. L. Trudeau with tuberculin made at the Saranac Lake Laboratory. Of 94 patients which were observed 46 were deemed suitable to report upon. These were treated at the Bellevue Hospital Tuberculosis Clinic in New York; in the tent pavilion on the Bellevue Hospital grounds where the patients were under constant supervision; at the Seton Hospital at Spuyten Duyvil, the Bronx, New York City; and in private practice in New York. About one third were working and earning a livelihood during the course of treatment, besides seven women who were attending to their usual duties.

Dr. Miller did not use tuberculin in cases with fever or in those who were progressing favorably without it; and no early or favorable cases for whom sanatorium or other climatic treatment was available were kept in New York for treatment. He used Koch's original tuberculin (T. A.), the bacillus emulsion (B. E.) and Denys' bouillon filtré (B. F.). The latter was the main reliance, although experience with all these preparations led to the conclusion that there is really very little difference between them either in their effects or their method of action. The bouillon filtre seems to be better in cases which show a hypersusceptibility to tuberculin. He began with a dose of .0000001 gm. and progressed by two injections a week up to a maximum dose of 1.0 gm., beyond which it seemed undesirable and unnecessary to go. The time required to reach this dosage is at least six months, which was the average period of treatment. In all 2,200 injections were given. It was found that it was impossible to rely in any way on the opsonic index as a guide in the tuberculin treatment of pulmonary tuberculosis.

The neutrophile blood picture of Arneth was more satisfactory and the conclusion was reached that the differential determination of the nuclear forms found in the neutrophile leucocytes of the blood is a very valuable guide to the resistance of a patient to tuberculin and of the approach to a condition of hypersusceptibility to this agent.

Of the forty-six cases, 4 were apparently cured; 11 were arrested; 9 were improved; 11 were stationary and 11 were progressive.

DISCUSSION.

Dr. C. C. Browning: It seems to me, in regard to Dr. Miller's position, that it is certainly impractical to give tuberculin in private work. I have had quite an experience in that way, and tuberculin should be studied to know what to expect of it and how to interpret it in order to give it successfully. The consensus of opinion seems to be that other methods are as reliable and are less dangerous, that it should certainly as yet be undertaken only by those who are in a position to select carefully their patients, with reference to the diseases of the eye specially.

As regards the use of tuberculin as a diagnostic agent by the general practitioner, it seems to me that it should be more commonly used than it is. It is only a short time ago that we had a request from a doctor for Koch's tuberculin. We wrote him specifically regarding the method of dilution and he got mixed on his decimals, and gave about five hundred times what we expected him to give. Now we expected him to give a very small dose and the result was that he got an excessive reaction, but there was no injurious result. If there was some way that our manufacturers could put it up not to exceed 5 mg. and some 3 mg., it would be an advantage.

Dr. Delancey Rochester: As to this reaction I feel it is a valuable aid toward diagnosis. We ought to thoroughly instruct students to make a very careful examination of the eye first so that they should never use it in any case which shows any disturbance or even irritation. If careful about that they will not get the evil results that have been reported by so many. If after the use of the Calmette test I find that a slight congestion occurs, I immediately begin to use boric acid; and the prompt application of such measures I think will prevent any serious disturbance of the eye.

Dr. Quimby: I must enter a protest to Dr. Barnes' last conclusion that young men leaving the medical schools should be taught and advised to use tuberculin. These young men have too many two-edged swords now. There are too many cases which have been reported where the eye had been totally lost as a result of the Calmette test. It has been forbidden in the New York City Hospital until after the eye has been examined by a competent ophthalmologist. It is very wrong to put it into the hands of young men.

I am sure that Dr. Miller will yet find the local reactions as well as the blood changes valuable guides in the administration of tuberculin.

The trend of specific medication has been so largely in the direction of immunization of recent years, that I dare say Dr. Miller has never heard Koch's original statement as to the action of tuberculin, that "it kills living tubercle tissue." This power to kill involves the possibility of a very different action of the highest therapeutic importance, to which I called attention early in 1891.

Since its action, even in large doses, is essentially limited to tubercle tissue, it will be more certainly so in weaker solutions, and we thus have what I ventured to call in 1891 a specialized systematic caustic by means of which we can produce any effect on tubercle tissue from the mildest stimulation to absolute necrosis. The essence of evil in tuberculosis is not the virulence of the poison produced, but rather its mildness and slowness whereby it causes a local cellular necrosis without exciting protective reaction. It is just here that the specific local action of tuberculin becomes so valuable. By proper modification of the amount and frequency of dosage it is possible to produce such intermittent stimulation as excites absorptive and reparative inflammation. Such use is obviously contra-indicated when the reaction is already excessive.

Dr. Edson: I have followed now for over a year in my own work with more or less completeness the estimation of the Arneth blood count. I have no figures, but I can say that it has carried to me a helpful picture and has proved in a large percentage of cases to tally quite closely with the clinical picture. It has in my hands proved quite as useful in giving me some measure of recording my prognosis. Unfortunately in my work in Denver we see very few incipient cases of tuberculosis. Many so-called cases resemble very much the cases which you see in the Henry Phipps Hospital in Philadelphia.

Dr. E. O. Otis: I fear I should not have Dr. Minor's son in my clinic, if he objects to the demonstration of the ophthalmo-tuberculin test to students, for during the past year I have been using and demonstrating this test. I have applied it in 100 cases or more; in fact, in every suspected case of tuberculosis in my clinic, and also upon my assistants and a number of my students. I have as yet met with no bad results, the main thing is to obtain a reliable preparation of tuberculin and apply it with care, always bearing in mind that a reaction does not necessarily mean active tuberculosis.

Dr. LeFevre: In regard to the eye test in tuberculosis, — within the last six months I have had one very unfortunate experience, in which it was only by great skill that the eye was saved. The eye was seemingly perfectly normal, and the preparation was a half of one per cent solution used to conduct the routine test, the patient having no history or sign of tuberculosis. The reaction was extension and was followed by a deep ulcer of the cornea.

I have noticed the most intense eye reaction in rheumatic cases and patients with rheumatoid arthritis. In none of these cases was there any history of tuberculosis. There seems to me to be a peculiar susceptibility of these cases to the tuberculin. I do not think, at the present time, that it is a safe test to put in the hands of the profession to diagnose tuberculosis.

Students should be shown the test, but I do not think the time has yet come for us to say definitely what is its value in diagnosis. I believe great damage is done by giving too early to medical students positive statements of the value of new means of diagnosis or treatment. Our teaching should be standard teaching.

Dr. Brown: We must not forget that a diagnosis can be made without the aid of tuberculin. First of all there are some cases, particularly where there are diseases of the eye, and in children, where the Calmette test should not be used. Furthermore, the subcutaneous test for tuberculin is not injurious. Quite recently there was a physician in the West who wished to give a patient the tuberculin test. He applied to a veterinarian, who sent him a dose for a cow. He gave all of it, 250 mgm., to the patient. He then wrote to Dr. Trudeau, "Is tuberculin safe?"

We have made it a rule to give it to every patient who has a closed lesion, i. e., to all patients who have never had T. B. in their sputum at any time.

Dr. Miller stated that B. F. and O. T. in his opinion have the same strength. I think that B. F. is stronger than O. T., though I have not yet proved it. The best tuberculin, it seems to me, is a suspension of B. E. in the B. F. We have yet to have any definite proof that the tubercle bacillus secretes any toxin during its growth, but we do know that heat does change the immunizing properties of a great many bacteria, and if there is anything in the growth produced by the bacillus it would be wise to make use of it, and for this reason I deem it is a wise thing to use the B. F., but also use the B. E. or the tubercle bacilli. I should like to ask Dr. Miller whether he has given tuberculin according to the opsonic index as advocated by Wright. I think Dr. Wright uses T. R. I note the tendency of some men to criticise Dr. Wright's method when they have not carried out his technic. (I think the technic makes it very impractical.) The clinical method has for its aim the immunizing of the patient against tuberculin. The laboratory method aims to increase the specific opsonins.

Dr. E. R. Baldwin, Saranac Lake: I agree entirely with Dr. Brown that the cutaneous test should precede all other tests and that the cutaneous test is capable of being used with quite as much value as the eye test and the subcutaneous test. We have, however, had no bad results in our own eye tests.

Now, as to the value of the eye test in a diagnostic way, I disagree with Dr. Minor about its not being thoroughly tested. Over 16,000 eyes have been tested in the last year. It has been so easily applied that it has tempted to a great number of unnecessary tests, no doubt. Clinical tuberculosis reacts very easily to a small dose and only such a reaction can be considered of positive value. The conviction is growing from the large experience now obtained that a negative result from a large dose of tuberculin is of far more importance in excluding tuberculosis than a positive result is in establishing the presence of clinical tuberculosis.

Dr. H. L. Barnes, Wallum Lake,: I wish to call attention to the fact, first, that the instances which Dr.

Brown relates show that there ought to be careful training of the medical profession in the use of the tuberculin test. It seems to me that the medical school and hospital are the places for it.

Again I call attention to the fact that I did not strongly urge the ophthalmic test, for I cautioned about being too enthusiastic over it. I have at present a strong preference for the subcutaneous test, in cases which are suitable for its administration, but in a considerable number of doubtful cases it cannot be used because of fever and poor general condition of the patients or because of the difficulty in taking the temperature every three or four hours in dispensary work.

Parents sometimes will not allow the subcutaneous test in very young children, but will readily assent to the cutaneous test. For most of the patients in whom the subcutaneous test is counterindicated the cutaneous or ophthalmic tests are available. These new tests, as well as the subcutaneous test, will doubtless be given carelessly or improperly with disastrous results in some instances but equally bad results follow the improper administration of any powerful medicinal agent. When carefully given the tuberculin tests may, in extremely rare cases, do harm, but this is equally true of operative surgery, anesthetics, vaccination or even tooth extraction.

Dr. Miller closes: We have examined 150 children of tuberculous parents in which the ophthalmic and cutaneous tests were used and had only five cases of bad results.

The results of these two tests were identical in all but ten cases; in nine cases a skin reaction occurred with no eye reaction and four of these patients were later given hypodermic injections of tuberculin and all reacted. In one case an eye reaction occurred with no skin reaction. In 38 of these cases the hypodermic test was also given and it corresponded in every instance with the results obtained by the cutaneous test.

In regard to Dr. Brown's question as to whether we used Wright's method, we were not able to get quite as far as that because the technic was not perfected at that time.

(To be continued.)

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Book Reviews.

Maternity. By Henry D. Fry, M.D., Sc.D. New York and Washington: The Neale Publishing Company. 1907.

The writer of this book has attempted "to place before the public a reliable and up-to-date treatise" on Maternity. In the reviewer's opinion he has gone many times into the nurse's field and occasionally into the physician's. The book, although it contains much of value, lacks force and directness. It is doubtful if it will fulfill its object.

Obstetric Nursing. A Reference Handbook of Obstetric Nursing. By W. Reynolds Wilson, M.D., Visiting Physician to the Philadelphia Lying-in Charity. Illustrated. 32mo, 258 pages. Philadelphia and London: W. B. Saunders Company. 1907.

Lack of conciseness characterizes each chapter of this little book. Although here and there some excellent points are made, on the whole the clear-cut descriptions so essential in a nurse's handbook are wanting. It is not a book to be recommended to those for whom it was written.

Diseases of the Stomach. By Dr. I. Boas, Specialist in Gastro-enteric Diseases in Berlin, Germany; Albert Bernheim, M.D., Freiburg, Germany, Assistant to the late Dr. D. D. Stewart, at the Philadelphia Polyclinic Hospital and Post-graduate School, Instructor in the Department of Diseases of the Stomach and Intestines. Appropriately illustrated with five full-page plates and 65 engravings in the text; pp. 730. Philadelphia: F. A. Davis Company.

This is an excellent book in many respects and the general practitioner will find in it much that is helpful. Like most books on a special subject, in many respects it is too diffuse. The sections on treatment are excellent, especially those portions which relate to diet. We cannot say so much for the discussion of gastric surgery. We also regret that none of the recent work on the constancy of the percentage of hydrochloric acid, on the possible identity of pepsin and rennin, on the Lenhartz treatment of gastric ulcer and the results of the newer methods of study of gastric secretion made upon patients with gastric fistula and broken communication between the esophagus and stomach, have found their way into the book.

Electrical Treatment. By Wilfred Harris, M.D., F.R.C.P. 12mo, pp. xii, 384. With 25 illustrations. Chicago: W. T. Keener & Co. 1908.

The object of this volume, one of a series on modern methods of treatment, is to give "a comprehensive view of the various forms of electrical treatment as practised to-day, giving particular attention to the work that may be done in medical practice with a good faradic and galvanic battery." The author has accomplished his object with a fair measure of success. After a brief description of methods and the different forms of apparatus, based largely upon the products of English electrical instrument makers, he takes up the different forms of electricity, describes the methods of employing them and the diseases in which they may be used, giving a rather longer account of the symptoms and diagnosis of the various diseases than seems absolutely necessary. This arrangement is somewhat unfortunate, for certain affections are discussed under faradism which might be better treated by galvanism and vice versa. The author takes too extreme a position, moreover, when he asserts that faradism should never be used in the treatment of facial paralysis and makes little reference to its use in other forms of peripheral paralysis. The use of the sinusoidal and high-frequency currents, the x-ray, static electricity and the electric light as a therapeutic agent are also discussed. The author give clear directions for the use of electricity in various forms of disease and points out the precautions to be employed. The book will serve as a helpful guide to the student of electro-therapeutics, although the reader will find little real help in solving the still vexed question of the actual value of electricity as a therapeutic agent.

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TYPHOID FEVER AND HAZEN'S THEOREM.

We speak of typhoid fever as an autumnal disease, by reason that its death-rate is highest in that season. And urbanites have, as a corollary to this, considered that "city typhoid is bred on the farm": that the disease has been contracted by urban sufferers during their vacations. Such is no doubt oftentimes so, especially since the bacillus is enormously diluted in the water supply of cities; whereas, on the other hand, the infection drained from a privy will easily saturate a nearby well. However, our comparatively recent literature concerning the fly as an intermediary explains many cases of urban typhoid, for which rural districts would be in nowise responsible. One need but count back two months from the fall typhoid mortality to the time when flies became rife; and to reflect that this period corresponds with the inception and course of "autumnal" typhoid. Of course, the higher temperature must also be considered; but only as a contributory, not as an essential, factor; it is most congenial to fly breeding, and its enervating influence is a predisposition to infection, typhoid or otherwise.

Other means than water (and ice) by which typhoid may be contracted are vegetables, fruits, meats and other foods upon which flies may have deposited the bacilli; and especially milk. It would seem that in Massachusetts practically all the typhoid fever epidemics in recent years have been traced to milk supplies. Nowadays the supervision exercised by the sanitary authorities is, no doubt, such that if any milk is responsible for typhoid dissemination, the infection must have entered this fluid after its delivery to the consumer. And in such circumstance the fly would seem to have been an essential intermediary. Other means of typhoid infection are by contaminated oysters and clams; and possibly also by lobsters and crabs, those scavengers of the sea. We have, from time to time, made known to our readers the possibility of dissemination by "typhoid carriers," who, it would seem, for months or years after they have recovered from the disease retain typhoid bacilli in the gall bladder as in a reservoir, so that their dejections are a constant danger. The fact that typhoid is not an air-borne infection; that the vomitus, the urine, especially the feces, perhaps the sputum and possibly, also, the petechiæ, contain the bacilli, should theoretically, at least, make preventive measures comparatively simple. With the technic of such prophylaxis the textbooks have made us familiar. One should, by the way, never neglect to disinfect the water in which the patient has been bathed. Regarding measures which the authorities must take, and which are beyond the power or resources of the individual to effect, we should urge the co-operation of the laity who ought, if necessary, to submit to essential sacrifices in order that the community shall be safeguarded against this infection,

To return to drinking water as a source of typhoid infection: Municipalities are now spending millions in filter plants and in like projects for the purification of their water supplies, and the expense has been considered amply justified if by such means only typhoid fever could be eliminated. The sanitary authorities in several large towns have observed, however, that a larger decline in the general death-rate has followed upon the purification of contaminated water, or at least upon the maintenance of a pure supply. And from such data Allen Hazen has formulated the theorem that for every typhoid fever death avoided by the purification of public water supplies, two or three deaths from other causes are also and at the same time prevented. To put the matter upon an economic basis; if, for example, the city of Pittsburg should by means of its new municipal water filters effect a saving of, at least one hundred deaths a year from typhoid fever, and an additional two or three hundred deaths from other causes, such saving of life would mean also the avoidance of a present annual economic waste of two millions of dollars, instead of half a million from typhoid fever alone. We are indebted for this formulation of Hazen's theorem to W. T. Sedgwick and Scott MacNutt, of the biological department of the Massachusetts Institute of Technology, who state in a preliminary communication,[1] that their observations, presently to be set forth in full, corroborate his estimate which they declare is quite conservative. They have made a statistical study of the result of purification of polluted water supplies in Lowell and Lawrence upon the total death-rate (checked by a comparison of similar data from Manchester, N. H., a city of the same class); and find that while the decline in total death-rate was to a large degree accounted for by the decrease in typhoid fever, a yet greater part of the decline was due to a diminution of deaths from such other causes as pulmonary tuberculosis, pneumonia and "infant mortality." Is this diminution due simply to the cessation of infection; or to some enhancement of vital resistance, or to the co-operation of these factors? Must the diseases here enumerated be added to the list of water-borne diseases, or does the use of impure water depress to a calculable degree the organisms' vital resistance? Here are certainly pregnant questions which these authors propound, and of which we may find some solution in their forthcoming paper.

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THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH.

The activity of the Rockefeller Institute for Medical Research is again exemplified by the appearance of the seventh volume of studies. These papers have been published elsewhere and are now collected in reprint form. It is, of course, too early to estimate the full significance of this liberally endowed institution, but it is perfectly safe to predict that the future will continue to show the wisdom of investing money in such an enterprise and that the institute will continually increase in usefulness and reputation. There is small doubt that the demands of modern scientific medicine require that the investigation of its problems be conducted independently of other distractions, and that the medical school, while remaining a center of instruction for prospective physicians, can hardly take the place in the community which an untrammeled institute liberally endowed is likely to assume. Undoubtedly, the two ideals of a progressive medical school are, on the one hand, the best teaching of students and, on the other, the prosecution of original investigation. There has been some slight evidence during recent years that the student was being neglected in favor of research. This, however, has no other significance than an indication of the enthusiasm which recent discoveries have brought in the field of theoretical medicine. The reaction is sure to come and the student will undoubtedly receive his full share of attention as is his just due. In the meantime, various independent endowments have been established, of which the Rockefeller Institute is perhaps the most noteworthy, through whose agency post-graduate study may be carried on to the greatest possible advantage. It is increasingly evident that to teach, to practise medicine and to devote time to original investigation is too much to expect of any one man, if he is to attain the highest success in either. We need men whose chief duty it will be to teach. Others, no doubt, through inclination or temperament, may best find their most successful work in practice. A third group will undoubtedly, in the future as in the past, give up the material emoluments and the contact with young men which teaching provides to devote their lives to the investigation of special problems. Such a differentiation must of necessity take place in increasing degree as time goes on, and the Rockefeller Institute, with other institutions of similar character, is sure to attract and do most to stimulate those men, unfortunately few in number, who through training and inclination are destined to become great investigators. Such is one of the marked values of these recently endowed establishments. The need of hospital facilities is likely to be met in the near future, and out of this is sure to grow centers of investigation in which the idea of teaching is wholly subordinated to that of progress in the science of medicine. Medical schools should not miss the opportunity which this situation offers and are not likely to do so. It has been increasingly apparent that attention to teaching as an end, and not merely as a means, has taken firm root, and that the practical side of the profession, often, we regret to say, spoken of with a certain degree of condescension, is sure to be developed in the best possible way, partly due to the fact that the Rockefeller Institute and similar organizations exist.

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MEDICAL NOTES.

Bequests to London Hospitals. It is announced that Mrs. A. R. R. Waldo-Sibthorp has, through her will, left £20,000 to the Royal Hospital for Incurables, and £10,000 to the Charing Cross Hospital. The residue of the estate, supposed to amount to about £75,000, is left to the West End Hospital for Diseases of the Nervous System.

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[1] Typhoid Fever and the Purification of Public Water Supplies. Science, Aug. 14, 1908.

Tuberculosis as Basis of a Lawsuit. — It is reported from Louisville, Ky., that an employee in a rug factory has brought suit against his employer in the amount of $25,000, the ground being that germs were in the old carpets which he was called upon to handle and that no proper antiseptic precautions had been taken to avert the danger.

Honorary Physicians and Surgeons to the King. According to the *British Medical Journal*, the King has made the following appointments: Dr. David W. Finlay, M.D., F.R.C.P., London, Professor of the Practice of Medicine in the University of Aberdeen, to be one of the Honorary Physicians to his Majesty in Scotland, in the room of Sir Thomas McCall Anderson, M.D., deceased. Sir William Macewen, F.R.S., M.D., Regius Professor of Surgery in the University of Glasgow, to be one of the Honorary Surgeons to his Majesty in Scotland, in the room of Sir Patrick Heron Watson, M.D., deceased. Dr. James Little, M.D., Regius Professor of Physic in the University of Dublin, to be one of the Honorary Physicians to his Majesty in Ireland, in the room of Sir John Thomas Banks, K.C.B., M.D., deceased. Mr. William Black Alexander, L.F.P.S.G., has been appointed Surgeon Apothecary to his Majesty's Household at Holyrood Palace.

Lectures in Connection with the Congress on Tuberculosis. — In connection with the forthcoming International Tuberculosis Congress, to be held in Washington, a series of special lectures will be delivered in that city and elsewhere by distinguished foreigners. A list of thirteen lectures has been published as follows:

Bernard Bang, of Copenhagen, Washington, Oct. 3. Subject: "Studies in Tuberculosis in Domestic Animals and what we may learn Regarding Human Tuberculose."

A. Calmette, of Lille, France. Philadelphia, Sept. 26. Subject: "Les nouveaux procédés de diagnostic précoce de la Tuberculose."

Emil Coni, of Buenos Ayres, Washington, Oct. 2. Subject: "La Lucha contra Tuberculosis en la Republica Argentina."

Arthur Newsholme, of Brighton, Washington, Sept. 29. Subject: "The causes which have led to the past decline in the death-rate from tuberculosis and the light thrown by this history on preventive action for the future."

Gotthold Pannwitz, of Berlin, Philadelphia, Sept. 24. Subject: "Social Life and Tuberculosis."

R. W. Philip, Edinburgh, Boston, Oct. 6. Subject: "The Anti-Tuberculosis Program — Coordination of Preventive Measures."

C. H. Spronck, of Utrecht, Boston, Oct. 7.

Andres Martinez Vargas, of Barcelona, New York, Oct. 9. Subject: "Tuberculosis of the Heart, Blood and Lymph Vessels."

Theodore Williams, of London, Philadelphia, Sept. 25. Subject: "The Evolution of the Treatment of Pulmonary Tuberculosis."

Dr. Maurice Letulle and M. Augustin Rey (joint lecture), Washington, Sept. 30. Subject: "La Lutte Contra la Tuberculose dans les grandes villes par l'Habitation; méthodes scientifique modernes pour sa Construction."

Dr. L. Landouzy, of Paris, Baltimore, Oct. 5.

Dr. A. A. Wladimiroff, of St. Petersburg, Washington, Sept. 28. Subject: "Biology of the Bacillus."

Prof. N. Ph. Tendeloo, of Leyden. Subject: "Collateral Tuberculosis Inflammation."

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Aug. 18, 1908, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 43, scarlatina 24, typhoid fever 32, measles 20, smallpox 0, tuberculosis 38; cerebrospinal meningitis 0.

The death-rate of the reported deaths for the week ending Aug. 18, 1908, was 21.07.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Aug. 22, 1908, was 275, against 243 the corresponding week of last year, showing an increase of 32 deaths and making the death-rate for the week 23.17. Of this number 144 were males and 131 were females; 273 were white and 2 colored; 198 were born in the United States, 71 in foreign countries and 6 unknown; 67 were of American parentage, 160 of foreign parentage and 48 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 49 cases and 3 deaths; scarlatina, 21 cases and 2 deaths; typhoid fever, 29 cases and 1 death; measles, 19 cases and 2 deaths; tuberculosis, 45 cases and 18 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 18, whooping cough 3, heart disease 18, bronchitis 2 and marasmus 13. There were 15 deaths from violent causes. The number of children who died under one year was 109; the number under five years 132. The number of persons who died over sixty years of age was 59. The deaths in public institutions were 101.

Cerebrospinal meningitis, 1 case and 1 death.

Diphtheria at Athol Fresh-Air Camp. — It is reported that diphtheria has broken out at the South Athol, Mass., Fresh-Air Camp. Six cases have thus far developed.

A Centenarian. — Mrs. Mary Cronin died Aug. 19, at Brockton, Mass., at the reputed age of one hundred and one years. She was married at twenty and leaves 11 grandchildren and 14 great-grandchildren.

The Price of Milk. — There is evidence that the price of milk this winter is to be higher than it was last winter. A well-known farm in the vicinity of Boston has announced a price of twelve and a half cents a quart instead of ten as last winter. That this example will be followed by other farms of equal standing is not to be questioned. The report also comes from Barre, Mass., that a movement is on foot in that and neighboring towns to raise, if possible, the price of milk, this fall. In general, it is evident that the agitation for clean milk, together with conditions on the farms, has resulted in a general elevation of price. If greater purity can be assured thereby, the situation can be more philosophically met, but that the increase of price is a hardship for the poor is not to be questioned.

NEW YORK.

Responsibility in the Death of Dr. Carlton Flint. — According to the *New York Medical Journal* the coroner's jury which investigated the death of Dr. Carlton Flint at Seabright, N. J., rendered a verdict holding responsible both the owner and the chauffeur of the automobile by which the doctor was fatally injured.

Hospital for Rockefeller Institute for Medical Research. — The announcement is made that plans for the new hospital building and isolation annex of the Rockefeller Institute for Medical Research have been submitted. The main building is to be seven stories in height, and with this will be connected a small isolation hospital, the estimated cost of the whole being $400,000.

"A Tent Colony." — One of the best things the city has ever done for the health and pleasure of the people is the giving, free of charge, to all who choose to avail themselves of them the privileges of country and seaside life. This is at Orchard Beach in Pelham Bay Park, the largest of all the public parks, which has a shore front of several miles on Long Island Sound. Here any one, rich or poor, can pitch his tent and stay as long as he desires, protected in his squatter rights as if he owned the land on which he lives. The beach, which can accommodate 2,500 persons, is one of the finest on the Sound, has hundreds of free bath houses, a large shelter pavilion, drinking fountains, etc., and is equipped with life lines.

The camp itself has a street-cleaning department, a police force, a hospital and a life-saving station which is in charge of the United States Volunteer Life Saving Corps, while food supplies are obtainable at the lowest market prices. The rules of the tent colony, which are rigidly enforced, have mainly to do with sanitation, and an air of neatness and good order pervades the place. Among those at present camping there is the Park Commissioner for the Bronx, in which borough Pelham Bay Park is situated, and he is regarded as a sort of mayor of the little canvas city.

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Current Literature.

Medical Record.

July 11, 1908.

1. Ellis, H. *The Conquest of the Venereal Diseases.*
2. Bassler, A. *Significance of Wash Water Examinations for Gastric Cells in the Diagnosis of Atrophic Gastritis; Report of Two Cases.*
3. Osterhaus, K. *Nerve Anastomosis in Infantile Paralysis.*
4. Smith, S. W. *Insanity: Its Genesis and Transmissibility.*
5. *Curtis, H. H. *Lactic Acid Bacilli Cultures in Nose, Throat and Ear Work.*
6. Robinson, E. P. *Some Cases, Other than Obstetrical, in which Hypodermic Injections of Ergot have been of Great Service.*

5. Curtis reports seven cases of chronic conditions of nose, including frontal sinus, ethmoiditis, and atrophic rhinitis, where the local use of a culture of lactic acid bacillus has produced very striking results. [W. B. R.]

New York Medical Journal.

July 25, 1908.

1. Stockton, C. G., and Woehnert, A. E. *Complicating Graves's Disease.*
2. Dercum, F. X. *The Supposed Evils of Expert Testimony.*
3. White, W. A. *Expert Testimony and the Alienist.*
4. Grandin, E. H. *Intra-Pelvic Versus Abdominal Method of Dealing with Mechanical Obstruction to Delivery in Cases of Confinement.*
5. Knott, J. *Dies Caniculares.*
6. *Croftan, A. C. *A Note on Conjugal Diabetes.*
7. Hennen, W. D. *Report of a Case of Extensive Emphysema Complicating Tuberculosis of the Lungs and Urinary Organs.*
8. Van Fleet, F. *The Doctor as a Public Educator.*

6. Croftan has observed six instances of diabetes occurring together in man and wife among 241 diabetics. The literature gives wide variations in the percentage of such instances. Croftan believes that the proportion of instances is far too great to warrant the inference that it is only a coincidence. He is unwilling to offer any hypoth-

esis of the cause of conjugal diabetes, but points out that members of a family are subject to the same errors of alimentation and exposed to the same nervous and emotional influences and to the same contagions. [R. I. L.]

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

July 25, 1908.

1. *Flexner, S., and Jobling, J. W. *An Analysis of 400 Cases of Epidemic Meningitis Treated with the Antimeningitis Serum.*
2. Thomas, J. J. *Injuries of Cranial Nerves from Fractures of the Skull.*
3. Rhein, M. L. *Dental Education.*
4 Bulkley, L. D., and Janeway, H. H. *Nutritive and Neurotic Disturbances of the Hair.*
5. Kilmer, T. W. *The Ambulatory Treatment of Pneumonia in Infants and Young Children.*
6 *Rucker, J. B. *The Smear Method as a Means of the Rapid Diagnosis of Rabies.*
7. Hansell, H. F. *An Infrequent Type of Optic Nerve Atrophy.*
8. Hulen, V. H. *Opacification of the Cornea Following Cataract.*
9. Knapp, A. *The Surgical Treatment of Orbital Complications in Diseases of the Nasal Accessory Sinuses.*
10. Thomson, E. S. *Some Clinical Aspects of Lenticular Astigmatism.*
11. Jones, C. P. *A Study of 100 Refraction Cases in Indians Fresh from the Plains.*
12. Donovan, J. A. *A Better Prognosis in Penetrating Wounds of the Eyeball.*

1. Flexner and Jobling tabulated 393 cases of epidemic meningitis treated with the anti-meningitis serum. Recovery took place in 75%. Twenty-five to thirty per cent of the cases terminated by crisis. In the great majority of instances, recovery from the disease was complete. The only persistent defect noted was deafness, and this occurred in a few cases only.

6. Rucker has used the smear method in some 13 cases of rabies. He employed either a modification of Giemsa solution or Van Gieson's stain. The method is absolutely reliable, as in all cases proved by the biologic test to be rabies Negri bodies were found in the smears. In the smear method, the Negri bodies appear very distinctly. The smear method is much simpler than any other and is very much shorter than a stained section, as a smear can be prepared in fifteen minutes. [R. I. L.]

THE LANCET.

July 4, 1908.

1. Garrod, A. E. *Croonian Lectures on Inborn Errors of Metabolism.*
2. *Morison, A. *Thoracostomy in Heart Disease.*
3. Haglund, P. *Concerning Some Rare but Important Surgical Injuries Brought on by Violent Exercise.*
4. Castellani, A. *"Endemic Funiculitis."*
5. *Cropper, J. *Phenomenal Abundance of Parasites in a Fatal Case of Pernicious Malaria.*
6. Walton, A. J. *A Consideration of the State of the Autonomic Nervous System in Acute Surgical Conditions.* (To be reviewed in Lancet of July 11.)
7. Currie, O. J. *Extirpation of the Lachrymal Sac.*
8. Hirsch, C. T. W. *Motoring Notes.*

2. Morison gives an interesting article on thoracostomy in heart disease. He goes over the cases previously reported in the work done on this subject, especially that of Brauer and Wenckebach. He presents a case of his own in a young man nineteen years old, in which a diagnosis of aortic regurgitation had been made and on which he operated for the relief of pain. The effect of the operation objectively and subjectively has been very satisfactory. He believes that a large heart powerfully pulsating against hard and resistant structures from time to time will result in a condition of excitation in excess of what is normal to it, causing various subjective discomforts from uneasiness to severe anginoid pain. In his opinion, operation in such cases is desirable and will give good results.

5. Cropper gives a short article describing a fatal case of pernicious malaria, which is illustrated by an excellent colored plate showing the very great abundance of the parasites. Out of 500 red cells counted at random, 248 were infected. One large mononuclear leucocyte contained three sporulating parasites and one red cell. [J. B. H.]

July 11, 1908.

1. Garrod, A. E. *Croonian Lectures on Inborn Errors of Metabolism.*
2. Battle, W. H. *Necessity for the Removal of the Appendix after Perityphlitic Abscess.*
3. Hunter, W. K. *Case of Sarcomatosis of Lymphatic Glands.*
4. Gubb, A. S. *Premonitory Signs of Arteriosclerosis.*
5. *Walton, A. J. *Consideration of the State of the Autonomic Nervous System in Acute Surgical Conditions.*
6. Horsford, C. *Original Method of Facilitating Intralaryngeal Operations, together with Four Cases of Innocent Growths of the Vocal Cord Removed.*
7. Edwards, A. D. *The Infant in the School Medical Examination.*
8. Lewers, A. H. N. *A Visit to Professor Wertheim's Clinique in Vienna.*

5. Walton gives a long article on the state of the nervous system in acute surgical conditions. He gives a brief outline of the work of Crile and other investigators, which has led to the present state of our knowledge of shock in man, which may now be accepted as one of exhaustion of the vaso-motor centres brought about by severe afferent impulses, manifesting itself by a fall of blood pressure with ultimate loss of nutrition and function of the vital centers in the brain and cord. In any severe operation in man, apart from the mere trauma, there are other factors which tend to keep up or produce the condition, which he considers in some detail; i. e., length of the operation, the anesthetics, — discussing ether, chloroform and spinal anesthesia, — the loss of blood and other fluids. Treatment is preventive and curative. Under the first heading, he believes that drastic purgatives should not be given and that considerable harm is done by an over-restriction of food prior to the operation. In regard to curative measures which may be taken, he considers drugs, infusion of fluids and mechanical methods. Strychnine in severe cases of shock is of no avail, nor are the ordinary cardiac stimulants. Suprarenal extract, however, given as an infusion, is of very great value. Ergot and morphine will help to a considerable extent, especially the latter. The injection of fluids is useful in all cases of lowered blood pressure, acting mechanically by increasing the amount of fluid in circulation. Mechanical methods, such as raising the bed, are of value. He next takes up changes in the local nervous system of the intestines, speaking of the physiology of peristalsis and the paralysis of the intestines following major abdominal operations. He describes the work of Hertz, Keith and others. The treatment where there is paralysis and dilatation of the intestine he takes up under the heading of administration of drugs by the mouth, enemata and subcutaneous injection of drugs. Eserine salicylate given in 1-100 gr. doses immediately after the operation, continued four-hourly until six doses have been taken, in his opinion is about the only drug which is of value. [J. B. H.]

July 18, 1908.

1. Whitla, W. (Sir). *Cavendish Lecture on the Etiology of Pulmonary Tuberculosis.*
2. Garrod, A. E. *Croonian Lectures on Inborn Errors of Metabolism.*
3. Smith, D. L., Radcliffe, J. A. D., Elder, D., and Crossley, A. *Observations on the Opsonic Index in Pulmonary Tuberculosis.*
4. Macnamara, E. D. *Blood Pressure in Neurasthenic States and the Effects of Certain Forms of Treatment Thereon.*
5. *Meek, W. O. *Case of Osteomalacia.*
6. Middleton, G. S. *Case of Diphtheric Paralysis Treated by Injections of the Anti-Diphtheric Serum of Roux.*

5. Meek gives an account of a case of osteomalacia with the clinical findings and careful blood examinations and a description of the conditions found at autopsy. The paper is illustrated with a few photomicrographs. [J. B. H.]

July 25, 1908.

1. Shaw, T. C. *Lecture on the Psychology of Success.*
2. Garrod, A. E. *Croonian Lectures on Inborn Errors of Metabolism.*
3. *Willcox, W. H. *The Importance and Significance of the Chemical Examination of the Gastric Contents after a Test Meal, with a New Method for Estimating the Ferment Activity of the Gastric Contents.*
4. *Gray, H. M. W. *Motor Functions of the Stomach, (a) in Normal Cases and (b) after Gastro-Enterostomy, as Demonstrated by X-Rays.*
5. *Bramwell, B. *Intermittent Claudication, or Intermittent Limping and Obliterative Arteritis, with Illustrative Cases.*
6. Richards, O. *Case of Successful Removal of a Stone Weighing Two Pounds.*
7. Morton, C. J. *Diagnosis of Diseases of the Stomach and Intestines by the X-Rays.*
8. Roberts, E. E. *Ascites and Tumors of the Ovary.*
9. Fick, R. (Prof.) *The Individual Plasma.*
10. Fletcher, W. *Lotah and Crime.*

3. Willcox believes that chemical examination of the gastric contents is greatly neglected as a routine procedure. He describes in a general way the various test meals and the chemical analysis of the gastric contents, laying particular emphasis on the ferment activity, regarding it as of almost equal importance to the determination of the active hydrochloric acid. He gives the four ordinary tests for ferment activity and in addition a somewhat complex one of his own. He presents some tables of gastric analyses in which the ferment activity was determined, as in gastric ulcer, gastric carcinoma, mucous colitis with gastric symptoms, normal stomach, simple gastritis, gastric contents before and after gastro-enterostomy, congenital pyloric stenosis in children, pyloric spasm and marasmus.

4. Gray presents an article, illustrated with numerous x-ray photographs, on the motor functions of the stomach in normal cases and after gastro-enterostomy. His conclusions are the same as those reached by other investigators, that the stomach is not of the usually accepted shape, that it is an organ of two compartments, — cardiac and pyloric, — acting in great part independently of each other and that in the operation of gastro-enterostomy the opening should be made in the pyloric portion.

5. Bramwell gives a short paper on intermittent claudication and obliterative arteritis. In most cases of this condition, three factors seem to take part in the production of the ischemia, which is the fundamental cause of the condition: (1) Vascular obstruction; (2) vaso-motor spasm; (3) the increased demand upon the circulation of the part which muscular activity entails. The objects of treatment are the following: (1) To remove the arterial condition on which the defective blood supply depends; (2) to keep the patient at rest and so prevent the temporary ischemia which is the immediate cause of the symptoms; (3) to prevent vaso-motor spasm; (4) to relieve the symptoms. He gives in some detail seven cases illustrative of this condition and its treatment.

[J. B. H.]

Münchener Medizinische Wochenschrift. No. 26.

June 30, 1908.

1. *Lüdke, H. *Chyluria.*
2. *Fehsenfeld, G. *The Ophthalmo-Reaction of Tuberculosis in its Relation to Autopsy Findings and Tuberculin Injection.*
3. Hörrmann, A. *The Conjunctival Reaction in Tuberculosis of the Genitalia.*
4. *Meroni, A. *The Ophthalmo-Reaction in Typhoid Fever.*
5. Goerlich, M. *Is the Conjunctival Tuberculin Reaction Harmless?*
6. Morgenroth. *The Cutaneous Tuberculin Inoculation According to v. Pirquet in Children under One Year.*
7. Erhardt, E. *The Use of Gum as an Addition to the Anesthetic in Lumbar Anesthesia.*
8. Schütte. *A Case of Suture of the Lung for Severe Bleeding after Gun-shot Wound.*
9. Lunckenbein. *Vaginal Cesarian Section in Practice.*
10. Zinsser, F. *The Treatment of Venereal Ulcers with Hot Irrigations.*

1. Lüdke reports the case of a woman, forty-six years old, who had never been out of Germany. At the time of entrance to hospital she had a history, extending over a period of years, of pain and burning at micturition. She had had a ventral fixation performed not long before. She had a marked cystitis due to the colon bacillus, which reacted not at all to treatment. After three months in the hospital, the urinary picture, which had theretofore been that of an uncomplicated cystitis, changed to that of a well-marked chyluria. The urine contained both macroscopic and microscopic fat in large amounts, with considerable fibin shreds, and blood. Sugar and albumin were both present, the former in small amounts. The fat was constant, being not more at one time of day than another. Fat-poor and fat-rich diets, as well as a two days' fast, had little or no effect on the amount of fat in the urine. Blood analysis showed no indication of chylemia. Most careful search for filaria was fruitless. The urine obtained by catheterization of the ureters was perfectly normal. The cystoscope showed a considerably inflamed bladder. The author discusses the case at length, and concludes that owing to the cystitis, for some reason, a flow of chyle from the neighboring lymph channels was brought about. That it was not a general condition, and that it was not due to filaria, is, at least, sure. The prognosis in such cases, 10 of which are reported in the literature, is poor for recovery, but the cases do not suffer from the condition. There is no treatment.

2. Basing his conclusions on 25 autopsies performed on cases tested by the conjunctival tuberculin reaction, Fehsenfeld believes that this test is of value in the diagnosis of tuberculosis, but is by no means absolute. A diagnosis of tuberculosis cannot be based on the conjunctival reaction alone. Combined with clinical signs and careful observation it may be of great assistance.

4. Meroni has tested a large number of typhoid cases, and also of non-typhoid patients, with the conjunctival reaction, as described by Chantemesse. He finds that six hours after injection a positive though mild reaction may occur in individuals who have not typhoid. The reaction, if present after twenty-four hours, is almost diagnostic of typhoid. Negative findings after this period speak against typhoid. In very rare instances, a slight conjunctival irritation may be caused by the alcoholic precipitate from sterile bouillon. Warming the typhoid toxin does not disturb its efficiency. No unpleasant after-effects were noticed. [R. D.]

No. 27. July 7, 1908.

1. Hering, H. E. *The Nature of Cor Alternans.*
2. Fischler. *The Importance of Urobilinuria in the Diagnosis of Liver Diseases.*
3. Spitzy, H. *The Question of the Treatment of Paralyses by Nerve Transplantation.*
4. Isserlin, M. *Expectation Neurosis.*
5. Pöhlmann, A. *The Internal Therapy of Syphilis.*
6. Koch, W. *The Mode of Origin and Treatment of Herniæ. No. II. Diaphragmatic Hernia.*
7. Preiser, G. *The Question of the Etiology of Cervical Spondylitis Deformans.*
8. v. Fellenberg, R. *The Serum Treatment of Puerperal Fever.*
9. Kaupe, W. *A New Remedy for Pertussis.*
10. Moerlin. *Fibrolysin in Interstitial Hepatitis.*
11. Kupczyk, B. *Observation on the Treatment of Congenital Word Blindness.*
12. Menge. *The Radical Operation for Umbilical Hernia, Etc.*
13. Cremer, M. *Carl v. Voit Memorial Oration.*

Berliner Klinische Wochenschrift. No. 26.
June 29, 1908.

1. Waldvogel and Sässenguth. *The Sequelæ of Lues.*
2. Zangstein, L. *Eczema and Asthma.*
3. *Mosse, M. *Metalymphemic Cirrhosis of the Liver.*
4. Tomaszewski, Z., and Wilenko, G. G. *Contributions to the Knowledge of the Antagonistic Action of Adrenalin and the Lymphagogues.*

5. Munzer, A. *The Histology and Classification of Landry's Paralysis.*
6. Rehfisch, E. *The Movements and Contractions of the Heart.*
7. *Bendig, P. A. *Further Contribution to the Article: "Acute Yellow Atrophy of the Liver in Syphilis."*
8. Blumenthal, P. *Contribution to the Question of Obtaining Diphtheria Antitoxin.*
9. Peyser, A. *Isolated Paralysis of the External Rectus Muscle in Homolateral Purulent Otitis Media.*
10. Muskat, G. *Passive Hyperemia in Fixed Flat Foot.*
11. Beitzke, H. *Recent Investigations on the Paths of Infection in Tuberculosis.*

3. Mosse reports a case of lymphatic leukemia, which, after a very long period of x-ray treatment, became greatly improved, in fact was practically cured. Subsequently the patient developed a cirrhosis of the liver and a chronic proliferative peritonitis. The writer believes this latter condition to have been brought about by the long continued x-ray exposures.

7. Bendig gives the history and autopsy reports of a young girl who was treated for advanced secondary syphilis. At entrance she had condylomata of both labia, mucous patches in the mouth and a well marked secondary rash. She did well under treatment and was discharged. She returned not long after with slight gastro-intestinal symptoms. Next day a slight icterus was present, though the patient felt better. During the next night fearful pain in the epigastrium appeared with general abdominal tenderness and increase of the jaundice. The next night the patient died. Autopsy showed acute yellow atrophy of the liver. The case is interesting, because the liver atrophy appeared after the visible secondary signs of lues had disappeared, most of the reported cases having occurred before the disappearance of the secondaries. [R. D.]

No. 27. July 6, 1908.

1. Baginsky, A. *The Latest Diphtheria Epidemic and Serum Therapy.* (Continued article.)
2. Noeggerath, G. T. *A Case of Congenital Elephantiasis.*
3. Lachmund, H. *Investigations of the Convergence Reaction in Reflex Fixation of the Pupils.*
4. Karcher, J., and Schaffner, G. *A Case of Stokes-Adams Disease with Hardening of the Bundle of His.*
5. v. Liebermann, L., and v. Fenyvessy, B. *Soap-like Compounds as Complements.*
6. Lublinski. *Angina and Miliary Tuberculosis.*
7. Sturmann. *Intranasal Section of the Antrum.*
8. Przewalski, B. *The Great Omentum. (Preliminary Report.)*
9. Pappenheim, A. *Studies on Phagocytosis (Bacteriotropism and Opsonization).*
10. Runge, E. *Appendicitis During Pregnancy, Labor and Puerperium.*

Die Therapie der Gegenwart. Heft 7.

July, 1908.

1. *Krönig, G. *The Natural Limits of Efficacy of a Curative Serum Treatment in Diphtheria and its Occasional Necessary Completion by Definite Local Measures.*
2. *Steinitz, E. *The Therapeutic Use of Easily Soluble Hypnotics of the Veronal Group.*
3. Mendel, F. *The Action and Excretion of Intravenously Injected Drugs with Remarks on Intravenous Treatment with Atutin, Atoxyl and Digitalis.*
4. Kirchberg, F. *Mechanic and Gymnastic Treatment of Pulmonary Emphysema and Bronchial Asthma.*
5. Levy-Dorn, M. *X-Ray Treatment in Private Practice.*
6. Pinaer, R. *A New and Efficacious Method of Treating Various Inflammatory Gynecologic Conditions.*

1. It is well known that in certain cases of diphtheria, even when a mixed infection does not exist, antitoxin is of very little value. The success of antitoxin treatment is to be expected when the toxic and antitoxic bodies are in equal number in the circulation and especially when the antitoxin has a free entry to the affected tissues. The toxin circulating in the blood is easily neutralized by the injected antiserum, but the toxins in the local lesion are often by no means so easy to reach. In many cases, there is in tonsils or pharynx a hard infiltration, filling the tissues so that blood and lymph flow is either very much diminished or entirely stopped. For this reason the antitoxin does not, or does only in a small measure, reach the seat of toxin formation. Krönig, basing his theory on clinical observation, has found that in such cases a free opening of the infiltrated part is of great advantage, and that in cases where the infiltration is felt to be hard and under great tension, not only is the incision followed by a feeling of local relief, but the subsequent antitoxin administration is much more successful than when this procedure is not resorted to. Bleeding of the incised part is to be encouraged by hot applications to the neck and hot irrigations. The author has found that incising of tonsils, in this class of diphtheria, is most important in preventing gangrene of the fauces.

2. The ideal hypnotic should be easily soluble in water, so that the absorption may be as rapid as possible. Veronal (diethyl barbituric acid), one of the best hypnotics known, has the disadvantage of being very slightly soluble. Steinitz has experimented clinically with the monosodium salt of diethyl barbituric acid, the chemical properties of which have been carefully studied by Fischer and v. Mering. The monosodium salt is a crystalline powder, with slightly alkaline bitter taste. It is immediately soluble in water (20%). By warming, a 30% solution, which is constant, when cooled, is possible. The solubility of veronal in water is 1:115. During the last four months, Steinitz has used this mononatrium salt of veronal on his clinic, administering it by mouth, by rectum and subcutaneously. The easily soluble salt is dissolved in one fourth of a glass of water, when taken by mouth. Tests have shown no cumulative action and much more rapid absorption. The drug should be given when there is little or no free HCl in the stomach, as the acid of the stomach transforms the sodium salt to veronal. The drug then may be given on an empty stomach three or four hours before the retiring hour. More rapid and intense is the action of the drug when given by rectum. The salt is dissolved in 5 ccm. of water and administered through a small syringe. The action is to be expected in fifteen minutes to a half hour. Not only does the drug produce sleep but, when thus administered, has also an analgesic action. The writer finds subcutaneous use of the drug less certain in its action; at times all that could be desired, at times merely quieting without producing actual sleep. The injection is painful. A 10% solution should be used, not more than 0.5 gm. being administered at a time. Steinitz has found this monosodium salt of veronal extremely valuable in the treatment of morphine habit, its quieting effect being very marked on such cases. Summaries of 11 cases in which this hypnotic was used are appended. [R. D.]

Archiv für Klinische Chirurgie.

Band 85. Heft 1.

1. *Körte, W. *The Operative Treatment of Gangrene and Abscess of the Lung.*
2. Grossmann, F. *Primary Thrombosis of the Internal Jugular Vein Due to Disease of the Middle Ear.*
3. *Liek, E. *A Further Communication on Heteroplastic Bone Formation in the Kidneys.*
4. *Heerfordt, C. F. *Bacteriological Examinations of Catgut, Using the Anterior Chamber of the Eye as a Place for Inoculation.*
5. *König, F. *The Late Results in Fractures Which have Healed with Deformity.*
6. Erdheim, S. *Cysts and Fistulæ of the Thyroglossal Duct.*
7. Bircher, E. *A Contribution to the Surgery of the Stomach and to the Technic of Gastro-enterostomy.*
8. *v. Baracz, R. *The Etiology of Lateral Abdominal Herniæ.*
9. *Kelling, G. *Blood Investigations in Cancer, from a Surgical Standpoint.*
10. *Pawlowsky, A. D. *The Etiology of Noma.*
11. Miyake, H. *Surgical Diseases Due to Ascarides.*

1. The communication of Körte is based on 58 cases of disease of the lungs, 57 of which were subjected to operation. All cases of tuberculosis have been excluded from

the series. Of 28 operations for abscess or gangrene of the lung, 20 have recovered and in 10 of them recovery has been confirmed through a period of four years. Of 15 cases of bronchiectatic cavities, only 4 recovered. The diagnosis of a focus of suppuration in the lung is often difficult, needing all the clinical aids possible, such as the x-ray. The post-pneumonic lung abscess is most often found to be single, and therefore the most amenable to treatment. The exploratory needle should never be used until the thorax wall has been opened at operation, thus avoiding infection of the pleural cavity. Körte prefers to operate under local anesthesia preceded by an injection of morphia. If this prove impossible, light general anesthesia is used while opening the thorax. The lung tissue itself can be handled with little or no pain. An extensive exposure of the field of operation is imperative. This is accomplished by the subperiosteal resection of two or three ribs. Whether the parietal and visceral layers of pleura will be found adherent or not can never be foretold. In the majority of chronic cases adhesions will be present, though they are occasionally absent, even when there has been a previous pleurisy. The lung should be sutured about the opening in all cases where there is any doubt as to the presence of adhesions. Following this, the pleural cavity is opened and the abscess sought and drained. If the condition of the patient be not too poor, Körte prefers to complete the operation at once. In searching for the cavity, both palpation and the exploratory needle may be used. Often, however, the lung must be opened blindly, and this is best done by the thermocautery. The majority of abscesses are found at a distance from the surface varying between 2 and 4 cm. Hemorrhage is avoided by the use of a blunt-pointed instrument for exploration.

On finding the abscess, it should be wiped out and thoroughly explored by means of a small lamp such as is used with the cystoscope. Any large vessels should be ligated. Coughing caused by irritation of the bronchial mucosa from wiping should be controlled by a cocain solution. After complete hemostasis, the cavity should be packed loosely with iodoform gauze, surrounding a rubber drainage tube of large caliber. The cases of multiple bronchiectatic cavities are much less amenable to operation than those of abscess, as the above figures demonstrate. Körte has not used any apparatus by which the atmospheric pressure is altered, such as those of Sauerbruch or Brauer. While these may be of value in some respects, it should be remembered that their action only lasts till the lung is incised, after which the pressure becomes equal. The conclusions from the above are as follows: Acute suppurative processes in the lung, without putrefaction or the formation of a sequestrum, should be treated by medical means for several weeks. If then the suppuration has not diminished and fever still continues, pneumotomy should be performed. In such cases the prognosis is good. Acute gangrene of the lung should be opened extensively without delay. Of the cases showing bronchiectatic cavities, only those should be operated in which the cavities are confined to a single lobe. They should be treated as radically as possible, even going so far as the resection of the involved lobe, if necessary.

3. Liek finds that he is able to cause the formation of bone in the rabbit's kidney by decapsulation of the organ and enclosure of it in the omentum, accompanied by ligation of its vessels, either at the same time or at a later period. The histological study of bone thus formed throws interesting light on the formation of bone in general.

4. Experimental investigations into the various methods of preparation of catgut have led Heerfordt to advocate the following method: After sterilization of the gut by any of the usual methods, such as dry heat, iodine (Claudius), or 2% carbolic acid, it is immersed in a 4% solution of formaldehyde for a time, varying according to the thickness of the strands. The formalin is then removed by immersion in a 5% solution of ammonium hydrate and the gut dried after being wound on a holder. Catgut thus prepared can be kept on hand for considerable lengths of time. For use it is boiled in the same way as is silk, the previous treatment with formalin having hardened it so that it does not lose strength, nor become thickened or slimy.

5. König emphasizes the fact that certain fractures, especially those about a joint with dislocation of a fragment of bone, should receive operative treatment by the open method. Fractures accompanied by such dislocation that the weight-bearing center is badly displaced should also receive this treatment. Although the examination of fractures at a period remote from their inception shows that many deformities are overcome by natural adaptation, especially in children, this event should not be expected in such instances as those mentioned above.

8. v. Baracz finds that in a large majority of instances anterior poliomyelitis is responsible for lateral abdominal herniæ (pseudo-herniæ). A congenital defect in the musculature may also cause them. When due to infantile paralysis, they should not be treated by operation, but by pads and binders, since a certain amount of recovery of function is to be expected.

9. Kelling has devised methods by which he feels able to make a diagnosis of cancer from the blood serum of the patient. One is a precipitin method, the other depends on hemolysis. The blood of recently killed sheep, hens, cattle and swine is used in the tests. More than 600 cases have been examined with results so favorable that Kelling is convinced that these biochemical reactions have a direct relation to malignant tumor formation. They can thus be used for the diagnosis of occult, non-palpable cancer, so that this may be operated upon earlier than would otherwise be the case. The reactions may also be used to determine the appearance of recurrences in operated cases.

10. Pawlowsky has demonstrated in a case of noma a streptothrix which he considers the etiologic factor in this disease. [W. C. Q.]

Revue de Chirurgie.

July, 1908.

1. *Lenormant, C., Duval, H. R., and Cottard, E. *Mixed Tumors of the Cheek and Lips. Contribution to the Study of Parabuccal Embryonic Inclusions.*
2. *Delore, X., and Leriche, R. *The Pathogenesis and Treatment of Intestinal Invagination.*
3. Couteaud. *Study of Hommer-Toe.*
4. Hardoüin, P., and Marquis. *Retro-Mammary Thoracic Cold Abscesses.* (Continuation and conclusion.)
5. *Cavaillon, P., and Perrin, E. *Colectomy in Cancers of the Large Intestine.* (Continuation and conclusion.)

1. The writers report, with minute histologic study, two mixed tumors, — one of the upper lip, one of the cheek,— and collect from the literature other similar cases. A careful review of the subject and discussion of the several theories of the origin of these tumors lead them to the conclusion that, in common with the mixed tumors of the palate and of the salivary glands, they are derived from fetal inclusions, along the lines of closure of the branchial clefts, of masses of ectodermal and mesodermal cells, as yet but slightly differentiated, forming growths which may contain a variety of tissues, primarily encapsulated and benign, but capable, under certain circumstances, of assuming a malignant character, whether carcinomatous or sarcomatous. This conclusion, which coincides with that of Wood and other recent investigators, seems to go far towards settling the much disputed question of the pathogenesis of the parabuccal mixed tumors.

2. The authors divide intussusceptions into two classes,— essential and secondary. The chief cause of the first they consider the persistence of the mesentery of the cecum and ascending colon, giving this portion of the bowel undue mobility and making this form of intussusception commonest in infants. The chief cause of the secondary forms they believe mechanical, the presence of a foreign body, a fecal concretion, an intestinal diverticulum, ulceration or tumor, whose irritation induces spasmodic efforts at expulsion that may lead to invagination. They report seven cases illustrating the different types and discuss methods of operative treatment. Without offering an explanation, they note the singular fact that intussusception is much less frequent in France than in other countries.

5. Concluding their study of cancer of the colon, the writers describe in detail their operative technic. For cancer near the cecum they do a single operation of excision and ileo-colostomy; for cancer in the sigmoid region, they operate in three stages, — colostomy above the tumor, removal of the tumor with colo-colic anastomosis and cure of the artificial anus. [R. M. G.]

RECORD OF MORTALITY

For the Week ending Saturday, August 15, 1908.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	12	8
Chicago	620	250	Waltham	3	1
Philadelphia	449	183	Pittsfield	5	1
St. Louis	—	—	Gloucester	11	7
Baltimore	214	83	Brookline	4	—
Cleveland	—	—	North Adams	5	2
Buffalo	—	—	Chicopee	7	4
Pittsburg	—	—	Northampton	2	1
Cincinnati	—	—	Medford	2	—
Milwaukee	—	—	Beverly	2	—
Washington	—	—	Leominster	4	4
Providence	—	—	Hyde Park	6	3
Boston	217	101	Melrose	4	1
Worcester	44	17	Newburyport	—	—
Fall River	43	28	Woburn	4	1
Cambridge	28	16	Westfield	—	—
Lowell	35	24	Marlboro	4	1
Lynn	25	13	Revere	6	3
New Bedford	35	24	Attleboro	2	—
Springfield	23	12	Peabody	—	—
Lawrence	29	21	Adams	7	6
Somerville	14	3	Clinton	2	0
Brockton	15	6	Gardner	—	—
Holyoke	—	—	Milford	5	1
Malden	16	5	Watertown	0	—
Chelsea	9	2	Plymouth	—	—
Newton	—	—	Weymouth	1	0
Salem	20	10	Framingham	6	1
Haverhill	14	4	Southbridge	5	3
Fitchburg	10	7	Wakefield	—	—
Everett	13	7	Webster	—	—
Taunton	17	7	Arlington	2	—

OFFICIAL LIST OF CHANGES OF STATION AND DUTIES OF COMMISSIONED AND OTHER OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED AUG. 5 1908.

Pettus, W. J., assistant surgeon-general. Granted leave of absence for one month and fifteen days from Aug. 22, 1908, with permission to go beyond the seas. Aug. 5, 1908.

Carrington, P. M., surgeon. Detailed to represent the Service of the International Congress on Tuberculosis, to be held in Washington, D. C., Sept. 21 to Oct. 3, 1908. July 31, 1908.

Carrington, P. M., surgeon. Granted an extension of leave of absence on account of sickness, for seven days. Aug. 5, 1908.

Wertenbaker, C. P., surgeon. Granted leave of absence for one month from Aug. 9, 1908. Aug. 5, 1908.

Clark, T., passed assistant surgeon. Granted leave of absence for one day, July 18, 1908, under paragraph 191, Service Regulations.

Creel, R. H., passed assistant surgeon. Leave of absence granted Passed Assistant Surgeon Creel for two months from Aug. 3, 1908, amended to be effective from Aug. 31, 1908. July 31, 1908.

McLlan, E. H., assistant surgeon. Granted leave of absence for seven days from July 8, 1908, under paragraph 191, Service Regulations.

Herring, R. A., assistant surgeon. Granted leave of absence for one day, July 31, 1908, under paragraph 191, Service Regulations.

Stiles, Ch. W., chief of division of Zoology, Hygienic Laboratory. Detailed to attend the annual meeting of the American Public Health Association, Winnipeg, Canada, Aug. 25, 26, 1908. Aug. 5, 1908.

Bean, L. C., acting assistant surgeon. Granted leave of absence for three days from Aug. 5, 1908, Aug. 4, 1908.

Cleaves, F. H., acting assistant surgeon. Granted leave of absence for twelve days from Aug. 3, 1908. July 29, 1908.

Delgado, J. M., acting assistant surgeon. Granted leave of absence for one day, July 30, 1908, under paragraph 210, Service Regulations.

Hamilton, H. J., acting assistant surgeon. Granted leave of absence for two days. July 31, 1908.

Hicks, W. R., acting assistant surgeon. Leave of absence granted Acting Assistant Surgeon Hicks for fourteen days from June 1, 1908, amended so as to grant five days only. Aug. 3, 1908.

Houghton, M. W., acting assistant surgeon. Granted leave of absence for fifteen days from Aug. 8, 1908. July 30, 1908.

Rowles, J. A., acting assistant surgeon. Granted leave of absence for five days from July 29, 1908. Aug. 1, 1908.

Safford, M. V., acting assistant surgeon. Granted leave of absence for five days, from July 28, 1908, under paragraph 210, Service Regulations.

Savage, Walter L., acting assistant surgeon. Granted leave of absence for thirty days from Aug. 8, 1908. July 29, 1908.

Schwartz, Louis, acting assistant surgeon. Granted leave of absence for seven days from Aug. 3, 1908, under paragraph 210, Service Regulations.

Weldon, W. A., acting assistant surgeon. Granted leave of absence for thirty days from July 30, 1908. July 31, 1908.

Wilson, J. G., acting assistant surgeon. Granted leave of absence for one day, July 27, 1908, under paragraph 210, Service Regulations.

Megaw, H., pharmacist. Granted leave of absence for thirty days from Sept. 1, 1908. Aug. 3, 1908.

Ryder, L. W., pharmacist. Granted leave of absence for one day, July 31, 1908, under paragraph 210, Service Regulations.

Thomas, A. M., pharmacist. Directed to report to Surgeon H. W. Austin, chairman of the board of examiners, to determine his fitness for promotion to the grade of pharmacist of the second class. July 31, 1908.

RESIGNATION.

Pharmacist R. Miskimon resigned, to take effect Aug. 1, 1908.

BOARDS CONVENED.

A board of medical officers was convened to meet at New York, N. Y., Aug. 5, 1908, for the purpose of making a physical examination of officers of the Revenue-Cutter Service. Detail for the board: Passed Assistant Surgeon J. A. Nydegger, chairman; Acting Assistant Surgeon Edward E. Lindeman, recorder. July 30, 1908.

A board of medical officers was convened to meet at San Francisco, Cal., on the call of the chairman, for the purpose of examining Pharmacist Thomas to determine his fitness for promotion to the grade of pharmacist of the second class. Detail for the board: Surgeon H. W. Austin, chairman; Passed Assistant Surgeon W. W. King, recorder. July 31, 1908.

CHANGES IN THE MEDICAL CORPS, U. S. NAVY, FOR THE WEEK ENDING AUG. 22, 1908.

O. Diehl, surgeon. Detached from the Navy Yard, Philadelphia, Penn., and ordered to the "Charleston" and to additional duty as fleet surgeon of the third squadron, Pacific Fleet.

M. F. Gates, surgeon. Detached from the "Charleston" and ordered to the Navy Yard, Philadelphia, Penn.

W. N. McDonnell, passed assistant surgeon. Detached from duty in connection with the Navy Rifle Team, Camp Perry, Ohio, and ordered to the Navy Recruiting Station, Minneapolis, Minn.

M. E. Lando, assistant surgeon. Detached from the Navy Recruiting Station, Minneapolis, Minn., and ordered to Washington, D. C., Sept. 14, for examination for promotion, and then to wait orders.

L. W. Bishop, passed assistant surgeon. Ordered to temporary duty at the Navy Recruiting Station, New York, N. Y.

RECENT DEATH.

Frederic Russell Cummings, M.D., M.M.S.S., died in Concord, N. H., Aug. 8, 1908, aged thirty-five years.

BOOKS AND PAMPHLETS RECEIVED.

Studies from the Rockefeller Institute for Medical Research. Reprints. Vol. VIII. 1908.

Pathological Technique. By Frank Burr Mallory, A.M., M.D., and James Homer Wright, A.M., M.D., S.D. Fourth edition, revised and enlarged. Illustrated. Philadelphia and London: W. B. Saunders Co. 1908.

The Muscles of the Eye. By Lucien Howe, M.A., M.D. In two volumes. Vol. II. Illustrated. New York and London: G. P. Putnam's Sons. 1908.

Pulsating Exophthalmos. By George E. de Schweinitz, M.D., and Thomas B. Holloway, M.D. Philadelphia and London: W. B. Saunders Co. 1908.

Original Articles.

THE COUNTRY DOCTOR'S RELATIONS WITH THE METROPOLITAN INSTITUTIONS AND SPECIALISTS.*

BY GILMAN OSGOOD, M.D., OF ROCKLAND, MASS.

A great variety of circumstances determines the location and future work of the physician.

The city, with its great hospitals and institutions of learning, affording ample opportunity for study and research, together with other attractions which go to make up city life, are great inducements to the ambitious physician.

The beauty of the environment, the comparatively short time of waiting before paying expenses, and other features, likewise attract its full quota to the country.

Having located in the country and entered into the professional life and activities of his adopted community, he adjusts himself to his surroundings, and in promoting the best interests of his patients has certain definite relations with the metropolitan institutions and specialists.

The country doctor is obliged to take a broad view of the field of medicine, and although it is not his privilege to delve as deeply into any selected branch as does the specialist, it nevertheless is his judgment that decides many important questions.

He determines the necessity of transferring his patient to other hands for special treatment, and not infrequently is obliged to urge upon him the necessity of following the advice of the consultant before he will submit to operation.

It is not always easy to determine that he does *not* need the specialist's treatment and that cessation of work and change of scene are the best methods of procedure for the restoration of health.

And aside from individual advice and treatment given in all branches of medicine, *he* is looked up to as the one in his community to direct affairs that pertain to public health.

The skill and knowledge of the specialist is not to be expected of the general practitioner, who has to toil early and late and has little time to give to study and research. He is fully sensible of his shortcomings and would like to enlarge his field of knowledge had he the opportunity to do so.

The country doctor is seldom lacking in knowledge of human nature, and the estimate placed upon him by his city friends is reciprocated, in that he differentiates judgment from error, wisdom from folly, skill from awkwardness and honor from pretense.

It is not infrequently his opportunity and privilege to defend the specialist when he is attacked and his treatment criticised.

It is not always easy for the general practitioner to adapt himself to the teachings of our leading surgeons, and in attempting to do so he sometimes meets with bitter experiences.

Formerly the country doctor did not send his gallstone cases to the surgeon, and although he had a few cases that suffered intensely from this affection, he at the same time saw many that had their attacks at infrequent intervals, and death from such cause was rare. To-day we are taught that the presence of gallstones is sufficient reason for operation.

In attempting to follow this advice we have seen death occur, and believe this patient would have lived had she not been operated upon. I am inclined to the belief that if all patients in the country known to have gallstones were operated on within the coming week, more harm than good would result from these operations; not that the patients might not be better off without their gallstones, but because men of inferior skill would participate in this surgery.

If the general practitioner is to advise his patients to subject themselves to this major operation, and it becomes a matter of general knowledge among laymen that those with gallstones should be operated upon, should not they have the same protection from danger incident to the incompetent surgeon that is given by the state in protecting our communities from quackery?

In view of the profound effect of death following operation on some patients who themselves are in urgent need of the surgeon's assistance, and in consequence of which they refuse to be operated upon, we believe the effect of death following operation on the community at large should be taken into consideration before performing operations when such are practically useless. I also believe much good would result, would every member of our society explain to our acquaintances of the newspaper fraternity, the difference between death from operation and death in spite of operation.

Notwithstanding the benefits many have been the recipients of by reason of modern medicine, we believe there *are* those who would receive greater benefit were they in the hands of the old country doctor. He held their confidence and had such control over them that there was a proportionately smaller number in the community looking for the occult, such as *now* worship at the shrine of Christian Science, Mental Science, Osteopathy, Spiritualism and the like.

The time was when the old country doctor was privileged to administer that mental medicine so comforting and so beneficial to those suffering from chronic disease. To-day he is robbed of that power and the patient suffers that mental unrest incident to a want of confidence in his doctor, as some one has told him that he is not having the right treatment, and that the x-ray or something else is just what he needs; and we regret that these sentiments are not always promoted by men outside the profession.

The country doctor, in looking over the field of specialists, selects for counsel, not only him whom he deems of good judgment, conservative and skilled in the technic of his specialty, but he also requires that the consultant be a gentleman.

He likes that good judgment which is manifested by his diagnoses. He likes that conservatism which causes him to refuse to interfere unless there is good and sufficient reason for doing so; and when operation is clearly indicated he likes him to be bold, trusting that his skill will give to his patient that return of health or alleviation of suffering for which he is seeking. And he requires of his consultant that gentlemanly treatment that enables him to maintain the respect of his patient when he is returned to him.

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* Read before The Massachusetts Medical Society, June 10, 1908.

The country doctor is sometimes *unjustly* criticised for his lack of knowledge, want of skill and general inefficiency in practising medicine. I will relate a few incidents that have occurred in the practice of the country doctor.

A charity patient, unable to journey to the city, required the service of a specialist; her physician informed the specialist of the situation, who volunteered his services, and without recompense and at a personal loss willingly came some distance to see the patient.

Such quality of mind and heart for which our profession is noted is not only appreciated by the layman, but also by its own members; and such incidents as these do more than words to cement the bonds of amity and good feeling between the country doctor and the city specialist. Although there may be times when the specialist is imposed upon by being asked to do work for a smaller compensation than the circumstances of the case allow, as the practitioner is himself sometimes unwittingly misled, yet I believe, with few exceptions, the country doctor so manages his work, that in looking after the best interests of his patients, he at the same time does not neglect the interest of the consultant.

I will here relate the story of a country doctor, telling the well-to-do father of a child, then in the hands of another physician and about to undergo an operation, that *he* could handle the case at little expense; that *he* could obtain the services of a well-known city surgeon for a very small fee, naming the amount, and likewise a nurse, thinking that by appealing to the man's pocket-book he would be able to purloin the case from his brother practitioner.

With regret I record a member of our profession in the country who not only treats his neighbors in an unprofessional manner, but extends his nefarious practice to imposition on the good nature of the city specialist. Likewise the city specialists have men within *their* ranks that may not be above criticism.

You will pardon me if I allude to a surgical case that the country doctor was going to operate upon, feeling competent to do so, but having passed to other hands through the intrigue of a brother practitioner who employed a city surgeon to do the work, the first physician by a peculiar combination of circumstances was obliged to be present and to listen to an attempt at humiliation by this specialist, who allowed himself to be a tool of the other physician.

Later when this physician, who had been the target of criticism, which he felt undeserved, knew of this surgeon leaving a sponge within the abdomen of a patient, when repeated count showed one to be missing, solaced himself with the thought, that if he himself deserved criticism there were others who were not infallible.

I have sometimes wondered if certain consultants try to explain the reason for not being called into certain sections of the state, once so familiar to them.

Another example of conduct on the part of the city specialist, hard to understand: Mr. B., having chronic Bright's disease as diagnosed by his attending physician, desired to consult a specialist and was directed to Dr. —. On his return he told his family physician that the consultant had informed him that he had no trouble with his kidneys, and the man who told him that he had did not know his business. Not wishing to credit this story, the country doctor wrote the consultant, repeating what had been told him and expressing a belief that there was some misunderstanding in what was told the patient, and asking for a renunciation of the statement if untrue; and if true, asking if such statement was warranted without microscopical examination of urine. But as this letter, written in a most friendly spirit, brought no reply, the story as told by the patient was accepted as true, and this patient was forever lost to him.

One of the discouragements sometimes incident to the country doctor is manifested by the following incident: A poor deformed girl with contracted pelvis and anchylosed hip was found in labor, and it was thought cesarean section might become necessary, but was at this time able to be moved to the city. Telephonic communication with a doctor in one of the hospitals that take such cases was gratifying in that he thought there was no doubt but that she could be admitted, but the case must first be referred to his superior officer. But later, when put in communication with this physician, was very curtly told that we would have to take care of the case at home as they could not be bothered with our undesirable cases. If the dead ever return to earth, the spirit of Dr. Walter Channing would have certainly appeared to rebuke this action.

Incidents sometimes occur that give rise to the belief that patients are better cared for at home than in the hospital. I will relate such incident: The only daughter of well-to-do parents, willing and ready to give whatever financial aid that was necessary for her welfare, passed through eclampsia at twin birth, followed by a very slow convalescence, and later developed symptoms of incomplete intestinal obstruction. An honored member of our society was called in consultation, whose suggestions were faithfully followed, and there being no improvement he was a second time called into the case, and, fully appreciating the lack of improvement and the probability of the necessity of surgical intervention, suggested her removal to the City Hospital where he thought she would receive the benefit of the best treatment that could be given her. His advice was followed and a full history of her case, together with what had been done for her, was handed over to the doctor at the hospital. She occupied the best room in the hospital. Although her family physician and friends who visited her from time to time could see that she was gradually losing ground, they were assured by the house doctor that she was doing nicely. After a residence there of seven weeks she was told that she would be able to return home in another week; but almost immediately following this announcement her family physician received a telegram, summoning him to the hospital at once. The surgeon who had not previously seen her had been called into the case for the first time, had advised an immediate operation as the only means of saving her life, and had expressed regrets that he had not seen the case before. Although practically moribund at this time, gastro-enterostomy was performed and she promptly died. Had this operation been performed a few weeks earlier, when she could have better resisted the shock of operation, a perfect recovery would have been consistent with the post-mortem appearances. The deductions drawn from this case are these: patients whom we direct to the hospitals, where a large number are cared for, sometimes fail to receive that individual care they deserve, and sometimes, instead of receiving the benefits of that expert treatment which their case requires, may on the other hand receive their death knell, which in this case would probably not have occurred had she been kept at home.

One of the most respected members of our society recently treated a young woman, suffering from pelvic pain and metrorrhagia following an abortion that was in no way open to criticism. A swelling appeared at the side of the uterus and five weeks after the onset of trouble, thinking she would be benefited by hospital treatment, she was transferred to the Massachusetts General Hospital. During her residence there she was curetted, and at the end of two weeks was discharged. She returned home, but was not well and continued to have pain, and called in another physician to treat her.

When questioned as to the reason for giving up her family doctor who had treated her through her weeks of sickness, and who had gained admission to the hospital for her in order that she might have the best treatment, she said her eason for doing so was that the doctors in the ospital did not think much of her doctor; they had told her that in their opinion he was responible for her sickness, and that there was no need f her having gone to the hospital at all. She lso said they pronounced her all right at the ime she left the hospital. To-day she is in bed without a nurse, suffering constant pain with a arge tender mass at side of uterus, her faith in her amily doctor gone.

Again the country doctor has had his patience ried when the Massachusetts General Hospital refused to take a case of acute appendicitis that required immediate surgical treatment.

If the absent treatment of the Christian Scientist is open to criticism, is not also the absent iagnosis of the admitting physician of the hosital, who pretends to determine the necessity for peration by a knowledge of temperature, pulse and ability to walk, obtained by telephone, open to criticism?

We have seen cases of appendicitis with normal pulse and temperature with free pus in the abdomen, and cannot forego the belief that the physician stating that he has an emergency case that requires immediate hospital treatment should be sufficient reason for its acceptance in a hospital that pretends to take emergency cases.

The country doctor once reduced a strangulated hernia under ether, and five hours later, believing intestinal obstruction still present, removed his patient to the hospital, a distance of twenty miles, who was told by the house doctor there was absolutely nothing the matter with him, but that he would keep him and operate for radical cure; but before daylight the next morning laparotomy was hurriedly performed which revealed a block.

We are all too familiar with the superior knowledge possessed by a certain type of the recent graduate who has a hospital appointment. He is sometimes ungentlemanly enough to snub the suburban practitioner, and cast reflections upon him in the presence of his patient. Such conduct is a reflection on the institution itself and those connected with it, and tends to estrange the general practitioner from those who cannot afford to incur his ill will and who are ethically bound to extend to him that same treatment that is due every honorable physician. The bonds of friendship between the country doctor and the great hospitals would be strengthened if more consideration was shown the poor patient in financial matters. Authority vested in hospital officers is sometimes manifested by such rudeness as to occasion comment, and there is to-day a widespread criticism not only of the treatment of patients, but of their friends who call to visit them or inquire after their welfare.

These remarks are not those of a pessimist, and are not intended as unfriendly criticism, but rather of friendly suggestion. We have an abiding faith in our profession and its members, and will strive to maintain that high standing which it deserves. The profession does not ennoble the man; the man, however, may ennoble the profession. What a man can accomplish depends on what he is; he can never transcend his own mental or moral stature, and his opinions, however wise, will only have weight commensurate with his own character of mind and disposition.

The physician should under all circumstances be a gentleman, always courteous in speech and manner towards all descriptions of persons. There always have been and will continue to be within its ranks, men who have not the wisdom to see that it is for their benefit as well as for the interest of others to treat their fellows as brothers. Personal experience in the executive work of a large hospital makes me charitable towards others, but criticism should not be withheld when we are promoting the interests of our patients and upholding the ethics of our profession. Neither will it be pleasing for us some day to read a parody on Elizabeth Barrett Browning's beautiful poem, "Kindness first known in a Hospital," that will be entitled, "Kindness not known in a Hospital." When the physician gives to his patients his highest consideration, when he fully realizes his obligations to his profession, then and not till then will be exemplified the teachings of St. Matthew, — "Therefore all things whatsoever ye would that men should do to you, do ye even so to them."

REMARKS BY DR. MAURICE H. RICHARDSON, OF BOSTON.

I have found, this winter, great instruction in the history of surgery and medicine in reading old files of the BOSTON MEDICAL AND SURGICAL JOURNAL, beginning in 1828. One of the first things I saw was an editorial on the "Treatment of a London Surgeon," by the London *Lancet*. The *Lancet* started out to correct the faults of metropolitan surgery, and it had a great deal to say against the hereditary surgeon of the metropolitan hospital. Its comments in some ways were amusing, but not always so, for the MEDICAL JOURNAL of Boston took the *Lancet* to account for the malignity of its attack on the profession. It would be a good thing were the BOSTON MEDICAL AND SURGICAL JOURNAL to republish its editorial of 1828.

Is it not a good thing to have, in opposition to overwhelming and perhaps overbearing and inconsiderate majority, an intelligent, alert and determined minority? I feel that it is. And I have been glad that Dr. Osgood has spoken with fearless candor upon subjects which cannot but profoundly interest the whole medical profession.

In commenting upon this paper, the scope of which Dr. Osgood communicated to me some time ago, I have reduced my remarks to writing, for I long since realized that a man wastes rather than saves time by extemporaneous speaking.

The relations of the consulting surgeon to the general practitioner are not unlike those of the consulting physician and of the specialist; in some ways they are like those between the physician and the patient himself.

I have discussed in private with Dr. Osgood the points in his address, and I found that his ideas and mine were so similar that I had made a syllabus of my remarks very appropriate to the discussion of his paper, before I knew even the scope of it.

The first thing to be remembered in this discussion is that we — both physicians and surgeons, family physician and consulting surgeon — are human, and subject to all the infirmities as well as the virtues of humanity.

What is the virtue that does most to make life agreeable and worth while? Is it faith, hope or charity? It is, without the least question, charity in the broadest interpretation; for charity means benevolence, unselfishness, good feeling and kindliness; it means fellow feeling, humanity, goodness and brotherly love. While it means also the giving of alms, I do not include in my use of the word *charity* so commonplace, if so desirable a virtue. Furthermore, by a charitable act I mean, in our profession, a kindly consideration for the feelings of others, a generous and practical interpretation of the Golden Rule, and a life of obliging, accommodating, indulgent, good-humored consideration for the acts, and, more especially, for the errors and weaknesses of others.

The physician is the most sensitive of men. No calling, not even that of theology, stimulates more sharply a love of praise. No one is more indignant than the physician under the faintest breath of criticism. And no wonder, because ungenerous criticism of his acts may cause sorrow unutterable. Errors in law mean loss of money, or worse, loss of reputation or of liberty. Such mistakes cause, I believe, much less acuteness of regret and chagrin than our own. The legal profession is used to criticism and abuse. The very essence of law is strife. In medicine it is, or should be, union, fellow feeling, generosity. If there is strife, it is or should be for the same beneficent ends, for a favorable verdict in which all parties to the action benefit,— patient, friends, physician and consultant.

As we grow older we become more charitable. I have often wondered why. Is it not because we have learned our own need of generous treatment by others?

When a physician accuses another of neglect, carelessness, ignorance, for acts of the like of which sooner or later he finds himself the unfortunate source, he feels all the more acutely, because of his early uncharitableness, the lack of charity in others. When a man testifies in court against another man for the bad results of an overlooked dislocation of the shoulder, how does this witness feel when he finds that he himself has made a similar and perhaps more inexcusable blunder? And when the surgeon assails a physician's diagnosis as the result of ignorance and inexperience, how does he feel when, on exploration, he finds that the physician is right? The only way to avoid such humiliations is in an unselfish regard for the rights and feelings of others in the practical, every-day application of charity in the broad signifiance that I have given it. One can carry charity into magnanimity; with charity he can heap coals of fire; he can turn a bitte enemy into a lasting friend.

I have known the country doctor, since the beginning of my practice, each year more and more intimately. He has the virtues and th faults of humanity, like the rest of us; but I do not believe that the consulting physician has an adequate conception of the life he leads. In word, it is a life of self-sacrifice, of long and laborious hours, continued year after year without rest or variety; it is a life consecrated for th most part to those refinements which more tha anything else make life worth living; the refinements of charity to which I have applied the word *benevolence, unselfishness* and *kindliness.* Th nature which is refined becomes by daily contac with suffering, both mental and physical, sti more refined; the one which is naturally coar and selfish becomes less coarse and less selfish.

We surgeons have laid almost all our disaste at the door of the medical practitioner. A death in appendicitis is because the operation is too late; a fatal hemorrhage in gall bladder surgery is owing to delay in diagnosis which has led to jaundice with its tendency to bleeding; a cancer of the breast is hopeless because the diagnosis of benign tumor has led the patient to think recourse to a surgeon unnecessary; a badly united fracture, an unrecognized dislocation — every evil that we meet with — is laid at the door of the overworked and poorly-paid practitioner of medicine.

Do we stop to inquire the circumstances of the delay? Do we learn that the doctor was not himself called until late, and that he did not lose a minute in summoning us? Do we know that he has been advising, year after year, an operation for gallstones? And do we realize the difficulties of diagnosis and treatment in fractures and in dislocations?

I fear we do not act upon the fact that there are two sides to every case.

And does the general practitioner, when he criticises the consultant, always consider the possibility that there may be two sides to *his* case? Perhaps the man whom the general practitioner criticises for what it has been reported he said, did not say anything of the kind, especially if the quotation comes through patients; perhaps the metropolitan surgeon has done all he could possibly do to protect the physician from the consequences of his own error. It is indeed the rule for the consultant to defend in every possible way the good reputation of the physician. In my experience it is the custom to apply in such cases the Golden Rule. As far as my teaching and example can accomplish anything, they influence my students and colleagues toward kindly consideration for the rights of other physicians, and more especially for their good standing among their patients.

The trouble is that we begin our profession with intolerance, though we end it in charity; and the intolerance or the charity is just as common in the consultant as it is in the general practitioner, and *no more so*.

In many suits for alleged malpractice I have testified in the defense of physicians. These claims for damages have been founded upon criticism of treatment made by brother practitioners. True, the comment which starts the trouble may have been innocent enough. The effect is a suit for damages. The man whose perhaps thoughtless words have caused the suit may regret it as much as he please; he will be the unwilling witness, forced to admit that he said the damaging things. He is then in an unenviable plight. Or he may show his malignancy by a willingness that reveals his bias and dislike. In an outsider such a witness cannot but excite compassionate though severe criticism; for in the course of time he sees the tables turn: the defendant the witness; the witness the defendant. He is sorry to observe that the same regrettable qualities of malice and revenge prevail.

If we could only see a little way ahead, how easily could such a humiliating spectacle be avoided! The lives of these men could be made pleasant by cordial friendship and support had either realized, as I do, that no single act will stir a man to the depths of thankful appreciation, and will engender and cement friendship, more than that which defends the character against unjust accusations. No one could heap such coals of fire as the man who, feeling himself unjustly criticised, returns that unfriendly act with a generous one.

Another point of view from which the consultant should consider the attending physician is that of the measure of success attending the case, both in reputation and in money. The surgeon — and I am qualified to speak for him alone — gathers the bulk of reward, both in reputation and in treasure. The physician shares a little in the reflected brilliancy of a successful case, and a little, very little, I fear, in the financial return. I know that he gets little credit for his timely diagnosis and for his efficient after-care. Yet the whole success of the treatment often depends upon timeliness of intervention and skill of after-treatment. Else why does the physician get so much censure for delay, and why do so many surgeons insist upon patients coming to their own hospitals.

But the achievements of success are best measured by the responsibilities of failure. The lay of the voyage in the time of Nantucket's prosperity in the whaling fisheries was allotted wholly by the responsibilities of the catch; the captain had by far the largest rates, a half; the harpooner, say, a twelfth; the man before the mast a two hundredth; and a greenhorn a two hundred and fiftieth or a two hundred and seventy-fifth of the net proceeds,[1] each fractional part of the "stock" being measured by the captain's estimate of the responsibilities. And who is held responsible by the owners for the failure of the voyage? It is the captain, and he alone. And who is responsible for one and all of the elements of failure in a surgical operation (except the diagnosis and the selection of a surgeon)? It is the man who operates. Can he divest himself of any of his responsibilities? Not of a single one — from the complications of the ether to the scalding of his patient; from the preparation of the field to a hernia in the scar. And it is right that he should be thus held responsible. Furthermore, he should insist upon the right of being held responsible, lest those least able to bear blame be made to carry the bulk of it. He should, under the great and almost constant rewards of success, gladly assume the infrequent blame of failure. And he should do this as a matter of right and justice to those least able to endure injustice, even if he leans to over-censuring himself. For example, he may try to escape his own responsibility by blaming nurses for a wrong count as the cause of his leaving a gauze in the abdomen; by blaming a nurse because after he has left the house she has burned his patient; but these are mistakes for which he is held legally responsible. He is in a sense responsible, for, although he relies on his nurses for a correct count and for careful inspection of heaters, it is his duty to see for himself, by multiplied precautions, that no gauzes are left in the wound; and his last look at the patient, and his last instructions to his nurse, must be with a view to guarding the patient against the accident of burning. When, in spite of great vigilance, an accident does occur — as, from human frailty it surely will — let the surgeon generously take upon his broad shoulders all the responsibility he possibly can.

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[1] Melville in "Moby Dick."

It seems unjust that I should have been held responsible for the blisters on the heels of a patient when the nurse placed the hot water bottles under them after I had left the house, but this blunder would not have been made if I had personally warned the nurse against it. I am glad to say that this experience of 1891 has served to protect from this accident many a patient since.

There are certain responsibilities which the layman does not appreciate: one is the anesthetic and the other is the medical opinion. Yet if an accident happens during the administration of the anesthetic, the surgeon is mulcted in heavy damages for allowing an uneducated person to give the ether. Nevertheless, I find patients frequently protesting against paying a fee for this very responsible part of the operation. In the country the attending physician usually gives the ether. I doubt if he ever gets a fee of any kind for that, though as a rule he gives the ether uncommonly well.

For making the early diagnosis upon which the surgeon's success depends, does the attending physician get an adequate fee or adequate appreciation? Far from it. He is lucky if he is not blamed for not being swifter in diagnosis, while his reward is contemptibly small.

We consultants do not always get the point of view of the practitioner who sends us his patients; and I do not know that I have it accurately even now. In surgery I am inclined to believe that one source of irritation lies in the surgeon's keeping patients for himself when they are sent, perhaps, merely for an opinion, and the physician expects to perform the operation if one is advised.

This theme opens up a broad field for discussion, for it suggests other topics upon which one can speak only with great delicacy. But perhaps they are the most important things that I could say.

Doubtless, in some cases I have assumed charge of patients who were sent to me for an opinion only. I do not know this to be a fact in more than a single instance, when I was indignantly reminded by the physician that he thought himself perfectly competent to perform the operation. I was very much surprised and mortified, because it was, in fact, a simple operation (cancer of the lip). But I assume, unless advised to the contrary, that a patient is sent me for opinion and operation, if operation is deemed advisable. The last thing in my mind is to take from the physician any patient, unless that patient is freely sent me. I do not know the feelings of other consultants, but I agree with what John Homans used to say: that no patient ever yet lived who was worth getting at the slightest loss of self-respect, or at the slightest unfavorable criticism of one's acts.

Whenever a brother practitioner does anything that we do not like, why is it not the best possible time to apply broadly the principles of charity, as I have said, and assume that the circumstances were such that the act was unavoidable, rather than to assume that it was hostile, selfish, unethical and reprehensible? I have felt the tendency towards uncharitableness in construing an act which seemed indefensible, and I have lived to be ashamed of the feeling.

That is the fact with me, and I have no doubt that it is the fact with other consultants. Nothing places a man in so disagreeable a position as the taking of another man's patient, no matter what the justification, unless that patient is handed over with the sincere, honest wish that the recipient take charge of the case. We are human and subject to human frailties, but the most displeasing thing in my whole professional life has been the unavoidable supplanting of another man in operating upon a patient. I use the word *unavoidable* advisedly. There are circumstances under which the surgeon or the physician *must* take the patient. In my whole life I have had only two such experiences, but, to this day, they cause chagrin and regret. The mortification was thrust upon me, in a way that I could not, without churlishness and pettiness and lack of generosity, avoid. The kindness and real charitableness with which the surgeons treated me in my disagreeable dilemma did more to make lasting my friendship and regard for them than anything else they could possibly have done.

We do not grab patients, or seek to divert them to ourselves or others; but we do assume, unless told to the contrary, that patients sent to us are sent for diagnosis and treatment. All that the physician has to do when he wants an opinion alone, is to say so, and his wishes will be respected.

This leads me to the most delicate topic of all: supposing the physician proposes to perform the operation which the consultant deems wise, what is a conscientious surgeon to say when he thinks the hazard unduly increased by the physician's want of experience? What is the surgeon's duty to his patient and to the physician and to himself?

I thought the other day that if I had operated on a certain breast tumor which I pronounced medullary cancer, and which the attending physician did operate on, I should have detected its benignity, and should have avoided sacrificing the breast. Should I? Before I had gotten quite over considering the question of this physician's fitness for operating — when the diagnosis of medullary cancer demands to-day the most extensive dissection — the breast came into Dr. Whitney's laboratory, and the tumor was conspicuously an encapsulated fibroma. Then I said again that I believed an experienced surgeon would have detected the benignity of the growth in time to save the breast.

But about that time I operated myself upon what I thought to be an almost hopeless, infiltrating cancer of the breast, and found — what do you suppose, after removing breast and pectorals and dissecting the axilla to the first rib? Not a sign of cancer then or at the laboratory examination, but a chronic abscess of the breast. The operation, I must say, was a great success; for healing was by first intention, cure was complete, and there may have been a malignant origin in the case; the patient was a woman of sixty-five. But how about fitness based upon experience, criticised in the case of my friend, the general practitioner?

I believe it to be our duty to discourage an operation of magnitude and danger if it is to be performed by one who never has been and never can be experienced in reading living pathology, or in making living dissections, unless immediate operation is absolutely indispensable to life, as in strangulated hernia. I do not refer to moderate experience, but rather to *inexperience*. One must exercise charity in his estimation of another man's ability. But how about charity toward the patient in the presence of the other man's inability?

My hearers will, I am sure, realize the difficulties in commenting upon this theme. It is so hard to discriminate between one's own selfishness, the patient's welfare, and the rights of the attending physician. But, candidly, is it not true that an operation, say for gallstones, ulcer of the stomach, uterine fibroid, interval appendix, movable kidney, — in a word, for any condition in which operation is not imperative,— is it not true that operation for such conditions had better be advised against if to the dangers unavoidable in all operations (from anesthesia to suppression of urine) is to to be added the avoidable one of inexperience on the part of the operator? If we all admit as true what I am sure we cannot but feel to be true, we shall candidly admit that no one should practise surgery without adequate preparation.

I am not, however, considering adequate experience in surgery, but rather adequate reasons for certain duties to the physician and the patient on the part of the consultant.

The relations between institutions and the medical and surgical community are perhaps the most difficult to maintain with impartiality and at the same time without friction, and yet the managers of institutions have a most difficult and exasperating rôle to play. When I have had occasion at times to lose my temper and to criticise severely certain acts, I have always found upon careful inquiry that there were seldom wanting good reasons for those acts. Not that I would endeavor to maintain perfection or infallibility on the part of a much-tried group of men, but I would remind every one who feels that he or his patient has not been treated perhaps with as much consideration as the circumstances demand, that many of the complaints on the part of the patients are without just foundation; that many if not all of the real errors occur in spite of great care on the part of those in authority; and finally that institution-men are, like general practitioners, an overworked and underpaid body, subject to criticism on the part of trustees, staffs, visiting committees of laymen, tax-payers, fee-dodgers, professional clientèle and, finally, an exacting and unreasonable public.

I have never carried complaints to the front door at the Massachusetts General Hospital without coming away feeling ashamed that I had added unnecessarily, and usually unjustly, to the heavy burdens that those who were running the hospital were already carrying. Perhaps no group of men have greater need of a charitable consideration of their acts than those who devote their lives to institution work.

Finally, I wish to repeat and emphasize the beneficent effect of a charitable construction upon all acts which at first sight, and on one-sided evidence, we are inclined to condemn, and to say that charitableness is not incumbent upon the surgeon any more than upon the physician; it is not incumbent upon the hospital authorities any more than upon the patients and their friends and physicians. No activity in human life is more dependent for its success and pleasure upon friendly and generous co-operation than the activities of the medical profession.

A STUDY OF ONE HUNDRED AND THIRTY-SIX CASES OF DIARRHEA OCCURRING ON THE BOSTON FLOATING HOSPITAL DURING THE SUMMER OF 1907.

BY W. P. LUCAS, M.D., BOSTON,

Late House Physician, Children's Hospital; Boston Floating Hospital.

I am indebted to Dr. John Lovett Morse and to Dr. Charles W. Townsend, on whose service I was House Physician, for the privilege of reporting these cases. On their combined service there were, during the ten weeks from July 2 to Sept. 14, 187 cases entered. One hundred and forty-seven of these cases had diarrhea in some one of its numerous classifications, the great majority being classed as acute infectious diarrhea (Shiga bacillus presumably being present), or as acute intestinal indigestion, which is only a step from the infectious form.

One hundred and thirty-six of these 147 cases have been chosen as uncomplicated cases of summer diarrhea of the severest types found in Boston during the past summer. The hospital boat draws from practically every children's clinic in Boston, and the most desperate cases were the ones usually chosen for the permanent wards where these cases were treated.

The permanent wards are situated on what is generally known on shipboard as the saloon deck, there being two end wards, with four others, situated two on either side, so that the air that these cases received was the best that circumstances would permit. The boat was out in the harbor for about eight hours a day, being anchored at one of the city park piers the remainder of each twenty-four hours.

The milk supply was the best that Boston had to offer during the past summer and was, I am sorry to state, none too good at times, as our bacteriological count throughout the summer would show, but at all times, when the bacteriological count rose towards the danger line, the milk supply was pasteurized on board, so one could justly say that, from the standpoint of the two most important factors, milk supply and hygiene, the cases were treated under as nearly ideal circumstances as it was possible to obtain.

Of the total cases diagnosed as diarrhea, 84 were infectious diarrhea and 63 were intestinal indigestion. The majority of these cases, on admission to the hospital, had the typical movements of intestinal infection: small, watery green, or yellow, consisting mainly of mucus, frequently with curds. Of all these cases, only 24 had blood in their movements while on board, so that of 84 cases of the infectious type only 22, or 26%, had bloody movements.

Initial high temperature was a noticeable feature in these severe cases only by its absence, low or subnormal temperature being more often the rule. (Case IX shows the highest temperature on admission.)

Vomiting was a factor of enough moment in 119 cases to require careful attention. There were several distinct types with which we became perfectly familiar before the season was over. (1) The utterly hopeless cases with severe toxemia, presenting the picture of "coma vigil," with eyes half-open, lusterless and with a proneness to develop corneal ulcers. (2) The toxic type with or without frequent stools, and very often the infants in this class have no movements without irrigations or only one to three a day, yet they were certainly toxic. It was often noted that the toxicity lessened with the frequency of the stools, thus showing that the number of movements is not always a good criterion from which to judge the severity of the disease. (3) Children between one and two years, active and in perpetual motion, until completely overwhelmed with toxins, are very trying to treat. (4) The type with frequent stools that do not appear very sick or toxic but often drag on to become numbered with the obstinate chronic cases.

The initial cleanser in most cases was castor oil in liberal amounts: one and one-half to three drams for children under one year. Calomel was given only when oil could not be tolerated, and in these cases it was rarely retained.

That high irrigations are of value there can be no question, but that too much weight is attached to frequent colon irrigations, I am convinced. There were few cases where the irrigation, *per se*, reduced the toxicity, and often after the first twenty-four or thirty-six hours of treatment it was seldom done oftener than once in twenty-four hours, however severe or toxic the case.

Of far greater value, where there is pronounced vomiting, is the practice of lavage. Of the 119 vomiters, 46 had repeated stomach washings, frequently three or four times a day. A half hour before feeding was attempted, the stomach was given a thorough washing. In quite the majority of these cases we had very gratifying results, and in few cases did we have to resort to tube feedings or rectal enemata.

The problem of what and how to feed these cases was always a perplexing one, which was met in various ways. Ninety-five cases were starved, the period of starvation averaging two and one-half days. Complete starvation of sterile water, or practical starvation, consisted in sterile water or barley water (.75% of barley starch) with 7% sugar of milk. Of these, 73, or 77%, were apparently benefited by the starvation. Five, or 5+%, were doubtfully, and 17, or 18%, were not benefited at all. Of these last, 16 had total starvation and proved fatal very early in their treatment, all dying within twenty-four hours of admission. Forty-one cases were started on a weak modification, low in fat, or on whey, buttermilk or fat-free milk in dilution with barley water. Twenty-nine, or 69%, of these did well, and 12, or 30%, did poorly.

When to start an infant on a weak mixture after a period of starvation can be determined only by treating each case as an entirely new problem. Temperature is not always a guide. Very often it continued high or even went up simultaneously with starting milk, but it was definitely proved that the rise was not due to the milk. That the milk was not at fault was shown by the general appearance of the child, absence of vomiting and continued improvement of the stool.

The intercurrent infections to be watched for in this connection are beginning otitis media, cellulitis, teething, pulmonary infection and the extension of the infection to the stomach.

The limit of starvation varies greatly, some apparently reaching it earlier than others. In several cases the period was twelve days, at the end of which time the infants were in better condition than would be expected after such a severe treatment.

One of the most important factors in starvations, when a sufficient number of calories is certainly not being taken, is the question of keeping up the liquid quotient. Fluid must be supplied, and in our treatment the saline infusion was very extensively used with most gratifying results. The only way that it was at all possible to continue a long starvation was in each case to make the amount of fluid the child took equal to what a normal child of the same age would take. If the stomach would not retain this amount, infusions were necessary to supply the deficiency, whether large or small. Some cases were given from 30 to 50 ounces per day by subcutaneous injection for several days in succession. Illustrative cases are number 6, 8, 5, 3 and 11. The infusion is an aid never to be lost sight of in desperate cases and should be used like any other remedial agent, in small or large amounts frequently repeated until results are obtained, the main point being to keep up the liquid quotient of the infant. Infusions were given extensively in 40 cases. In these, 23, or 57%, were benefited; 10, or 25%, doubtfully benefited, and 7, or 17%, were not benefited at all.

How much effect stimulation, that is, brandy, strychnin and atropin, had on these cases, can be judged from the following table:

0 = No effect. + = Good effect. — = Bad effect.

Length of Starvation.		1				3		4	2			3			12	2	10	8	8	2		6	8	3½	6	1			3	3				
Effect of Long Starvation.		+				+		+	+			0			+	+	+	0 +	+	+		+	+	+	+	+			+	0 +				
Starting Milk.	+	+	+	+	+	+	+	+	+	+	+	0 +	+	+		+	−	+	+	+	+	+	−	+	+	+	+	+		+	+	+	+	+
Infusions.															+		+		+			+	+		+					+				
Stimulation.												0					0 +	+	+			+	+	+	+					+				

Length of Starvation.			3	5	1		2	2	2	2	1	2	2	4	2	3	2		2	4	2	⅛	⅓	½	1	3		3	2		1	3½	3	
Effect of Long Starvation.			+	0 −	+		+	0 −	0 +	0 −	0	+	+	+	+	0 −	+		0 +	−	0 −	0	0	0	0	+		+	+		+	+	+	
Starting Milk.	+	+	+		+	+	+		0 −			+	+	+	+		+	0 −	0 −							−	+	− +	+ −	−	+	+	+	+
Infusions.				+ 0				0	+ 0	0	0			+		0		+ 0	+	+	0			0 +		+ 0		+	+ 0	0				
Stimulation.				0				0	0	0	0		+			0		0 +	0 +	+	0	0	0	0	0	0			0	0	+			

Length of Starvation.	1	4		1	6	2		3	3	7	4	4	2	3½				6	4	2	2	2		2	9½	4	5	3	5	5	2½	2		
Effect of Long Starvation.	+	+		+	+	+		+	+	+	+	+ +	+	0 +				+	+	+	+	0		+	+	+	+	+	+	+ 0	+	+		
Starting Milk.	+	+	−	+	+	+	+	+	+	+	+	− −	+	0 +	+	+	+	+	+	+	+	0	0 +	+		+	+	+	+		+	+	+	0
Infusions.		+								+		+											+		0 +				+	+ 0				
Stimulation.										?		0					0						0		+ 0				0	0		0		0

Length of Starvation.		2	3	1	4		2		2	2	2	1		3	1	5½	4	11	7½	6½			3				5	4	1	3	1	5	4	
Effect of Long Starvation.		+	+	+	+		+		+	0	+	+		+	+	+	+	+	0 + +	+ +			+				+	+	+	+	+	0	0	
Starting Milk.	0	+	+	+	+	0 +	+	+	+	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+		+	0 +	+	+	+	+		0	+
Infusions.					+		? +	+				+				+		+	+	+ 0							+					0	0	
Stimulation.								0		0							0 +	+	0 +						0		+			+		0	0	

Of 49 cases receiving stimulation, 12, or 24%, were benefited; 9, or 18%, doubtfully benefited, and 28, or 50%, were not benefited at all. So, comparing the medicinal stimulation with the beneficial effects from the saline infusions, one is struck with the fact that the infusion plays a double or triple rôle: First and foremost, in supplying the much needed water to the thirsty system; second, in furnishing stimulation; and third, and very doubtfully, in acting as a diluent of toxin.

The above table shows the effect of starvation, of starting milk, of saline infusions, and of stimulations, and gives the length of starvation period in each case.

Of the 79 cases in which milk was started after starvation, 61, or 77%, did well, and 18, or 22%, did poorly.

The character of the stools after becoming normal varied somewhat according to the food given. The typical normal buttermilk stool was rather large, yellowish brown or sometimes almost an olive green, in consistency rather spongy, reminding one of a mass of fibrin, spreading perfectly smooth, slightly tenacious, with a distinctly acid odor. The fat-free milk stool is light brown in color, opalescent, salve-like, perfectly smooth, no lumps or curds, with not a disagreeable odor.

ILLUSTRATIVE CASES.

Case I illustrates a typical case of reinfection.

Boy, eight months old: breast fed for seven months, since then on home modification, cow's milk; admitted July 6, with the history that on June 17 began to have frequent stools and persistent vomiting; has had blood since July 5; child was very toxic; signs of rickets and secondary anemia pronounced: after six days of starvation, on account of poor general condition, was started on feedings; improvement was very slow but gradual and steady. On July 30, before reinfection, the note was, "seems to be gaining strength slowly; movements frequent but better; takes nourishment moderately well." On Aug. 3, "movements increased in frequency and character not so good; has considerable gastric distress; general condition poor; numerous moist râles and slightly diminished dullness corresponding with right lower lobe." Improved considerably until the 10th when he had another exacerbation, from which he rapidly succumbed on the 19th.

Case II represents fatal relapse. Improved until milk was contaminated, then had relapse.

Boy, eight months old: breast fed for three weeks and since then on cereal dilutions of condensed milk; constipated until July 10, since then has had from eight to thirteen stools, green and watery; vomiting a pronounced feature. Admitted July 19. After eight days of starvation, the note was, on the 28th, "has improved slightly but steadily; takes nourishment in small amounts fairly well; character of stools has improved. Improvement in general condition and gain in strength very slow." On Aug. 31, just before the reinfection, note "movements show considerable improvement: appetite good, general condition better." On the 14th started in vomiting and having frequent stools; never improved, dying on the 20th.

Case III illustrates long starvation with very satisfactory result, with middle ear complications which kept temperature up.

Boy, ten months old; previous feedings half milk and water. July 12, started in vomiting, with diarrhea, eight to twelve movements per day. On admission condition was that of a fairly well-developed child with a very severe infection; toxic and vomiting. Was starved twelve days to the limit. On July 30, the day that the child was put on buttermilk, the note was, "condition is much better, character of the stools having improved markedly since last note, two days previous; seems less toxic; vomits only occasionally." Note on Aug. 6, "ear started to discharge profusely; general condition improving; is not satisfied with the feedings."

Case IV. Rise in temperature does not always mean reinfection or a relapse, as in this case due to a cellulitis of the scalp.

Girl, eight months old: admitted July 20: fed on proprietary foods. Latter part of June began to have frequent green movements, ten to twelve per day; offensive, with curds. On admission was fairly toxic; improved slowly: after ten days of starvation was in pretty good condition; seven days later temperature went up to 102°, not on account of reinfection, but on account of the cellulitis of the scalp. Note on the 9th, "seems brighter and better to-day; appetite good; seems fairly satisfied; movements show signs of slight indigestion; cellulitis of occipital region is improving rapidly since free drainage has been instituted." Discharged well on Aug. 21.

Case V illustrates a case in which the condition did not warrant continuation of starvation, and although the temperature went higher it was considerably better. During this forty-eight hours the stool did not grow worse.

Girl, seventeen months old; admitted July 22; never sick before. On July 19, began vomiting three or four times a day; has had numerous bloody mucus stools; condition was that of a poorly nourished child; not quiet until completely overwhelmed with toxins. She was starved for six days, when her general strength was so low that she was put on buttermilk, even though she was still pretty toxic. Feedings were started on the 28th and the temperature went up to 103° and remained up for twenty-four hours, then gradually came down to normal. On July 25, the note was, "condition still fairly toxic; stools have improved markedly; general strength and condition very poor." Note on July 28, "toxicity has increased till child is fairly overwhelmed; lies in a listless whining condition; character of stools slightly better; prognosis unfavorable." Note on July 30 is "condition still very grave; grows slightly less toxic; has taken fair amount of liquids and movements are slightly improved." She continued to improve except for slight gastric upset with temperature to 102° and made an uneventful recovery.

Case VI. Starting milk apparently made child more toxic for twenty-four hours, then condition improved until recovery.

Boy, seven months old; breast fed two months, since on home modification; well till July 19, since then movements nearly every hour. Was admitted on the 22d; toxic with frequent mucus stools; no blood; improved very slowly in general condition. On 26th, "general condition improved; character of stools considerably better; takes nourishment fairly well." On the 30th, after starting milk (condensed milk 1 to 10 barley water with 7% sugar of milk), "toxicity increased; character of movements not improved; takes nourishment well and shows no gastric disturbance." By the 6th, "general condition and character of stools have improved markedly; has taken food and seems fairly satisfied." On 26th, "is doing splendidly, appetite fine; movements good, is ready for discharge."

Case VII represents a bad case where starvation to the limit, followed by careful feedings, surely saved her.

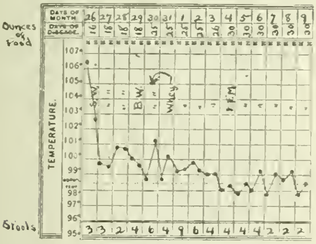
Girl, two months old; breast fed for two weeks, then home modification of cow's milk. Always well until July 12, then commenced having diarrhea, five or six stools per day with mucus and blood. Admitted July 22; note on the 23d is, "child looks toxic, movements show marked infection, has taken fair amount of liquids, is given a little stimulation, brandy, minims ten, every two hours." After starvation of six days was put on buttermilk and improved steadily in every way until discharged on Aug. 12. Oscillations in temperature are explained by the fact that the child had pustular eczema.

Case VIII. Not until ninth day of starvation did child show any signs of improvement, then changed for the better and went along well except for a middle ear.

Boy, twenty-one months old; diarrhea for four weeks previous to admission on July 25. Active child, very toxic, with frequent bloody mucus stools; starvation was carried on during period of eleven days, during which time child was very toxic and has had marked gastric intolerance. Note on Aug. 4, the day that milk was started, "general condition is improved; child seems stronger, notwithstanding continued starvation; condition of stools better." On Aug. 6 the note was, "has taken buttermilk in small amounts fairly well; seems satisfied; general condition improved as well as digestion." This case had an abscess from saline infusions, being one of the two cases which developed abscesses from this treatment. Had a middle ear also but made satisfactory though slow recovery.

Case IX. Illustrating starting of whey; temperature went up; did not affect stools or general appearance of child.

Girl, three months old; fed on breast for three weeks, since then on dilutions of cow's milk and water; was never sick until several days before admission, when she started to have frequent movements after every feeding: no blood, mostly mucus; had been vomiting everything. Admitted July 26; temperature then was 106°; very toxic; physical examination negative. Temperature came down and was normal the morning of the 30th, when child was started on whey; that evening temperature shot up to 101.2° but there was no increase in toxicity; character of stools improved as shown by the following note made Aug. 1: "general condition improved; does not seem satisfied with feedings; movements have improved, containing less mucus." Child made an uneventful recovery.



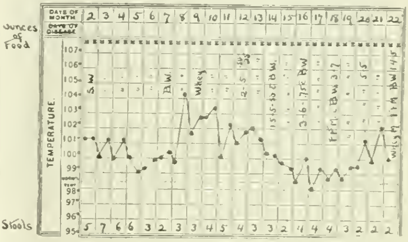
Case IX.

Case X shows that improvement may be very slow but steady, whether starved or fed.

Girl, eight months old; brought up on proprietary foods with cow's milk; never very healthy. Admitted on Aug. 1, with the history of having had frequent stools; moderately toxic; starved three and one-half days, then started on alternate feedings of barley water and buttermilk; for one week improved very slowly in general condition; movements continued to show marked indigestion. Note on Aug. 13 was, "is practically over the attack, movements almost normal, appetite good, condition good."

Case XI illustrates the fact that if whey had been started on the seventh or eighth, the rise in temperature would have been credited to the whey.

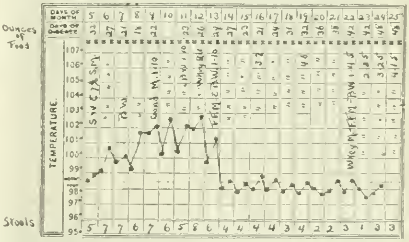
Girl, fourteen months old; nursed eight months, then put on bread, crackers and milk; always well until July 19, since then has had frequent movements, ten to twelve a day, with mucus and blood; has had considerable pain. Child admitted Aug. 2; physical examination negative; condition was that of a fairly well-developed and nourished child with a severe grade of gastric and intestinal infection. Temperature on admission was 101.5°; on the evening of the 5th had reached 99°. If at this time child had been put on whey the future rise in temperature would doubtless have been credited against the whey. Starvation, however, was continued, as the general condition and toxicity still remained marked. On the 8th, the temperature went up to 104.2° for no apparent cause. On the 9th, the temperature was still up; the child, however, looked less toxic and whey in small amounts, at frequent intervals (½ oz. every half hour), was started, gradually increasing the amount at frequent intervals. There was an uneventful recovery except for a middle ear, which came on late in convalescence.



Case XI.

Case XII shows that temperature is not always a guide to starting milk. General condition was better, although temperature was up when milk was started.

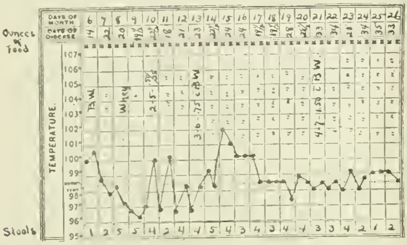
Girl, seven months old; breast fed for two months, then on condensed milk, Mellin's Food and home modifications. Admitted Aug. 6. Had been sick since July 22, with vomiting, frequent bloody, mucus stools and intestinal infection; very toxic. After four days of starvation, temperature had come down and toxicity was considerably less; also movements were much better. On starting food temperature went up but toxicity did not increase nor did movements grow worse. Temperature was kept up by middle ear, which was opened on the 12th and again on the 13th. Child went along fairly well. Discharged improved.



Case XII.

Case XIII. Improved rapidly as far as general condition, but movements were slower in improving, with a final febrile attack, without change from general condition or stools, during which milk was kept up.

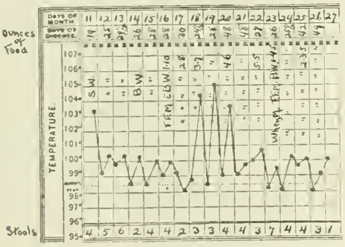
Girl, four months old; premature child; brought up on home modification; never has been well since Aug. 1; has had from ten to twelve movements per day, mucus but no blood; has been vomiting persistently. Admitted Aug. 6; general condition was that of a poorly nourished child with an intestinal infection. After a short starvation period of less than twenty-four hours, whey was started in small amounts. Child improved rapidly as far as general condition was concerned; movements were slower in improving. On the 15th there was a sudden rise in temperature with no cause in the physical examination. Note on the 16th was, "general condition is better; appetite good; stools much better." Nothing was found in the physical examination to account for the temperature. Child continued to improve rapidly. Discharged well on Sept. 1.



Case XIII.

Case XIV illustrates case in which temperature does not always mean that treatment is at fault or infection is worse; cutting teeth.

Girl, ten months old; breast fed for three months, then on malted milk. Well until Aug. 1; vomiting every feeding since then; from four to ten movements per day with mucus and blood. Admitted Aug. 11; moderately toxic, was starved for five days; did very well; two days after starting fat-free milk temperature shot up to 104°; no change in stools; child did not look more toxic; cause of rise in temperature was found in the fact that child was cutting lower incisors. Made an uneventful recovery.



Case XIV.

Case XV. Boy, five months old. Admitted Aug. 11; since July 15 has had diarrhea with ten to fifteen movements per day, with vomiting; condition is that of a fairly well-developed and nourished child; pretty toxic; after two days of starvation note was, "toxicity was less, movements not very frequent, showing moderate grade of intestinal infection." Note on the 23d, was "has been improving in every way; appetite fine and movements show marked improvement; has had a slight amount of bloody discharge from right ear for past few days, with no clinical symptoms outside of slight restlessness." Continued to do well and was discharged on Sept. 14, improved.

Case XVI illustrates a case where simply a change of feeding was sufficient.

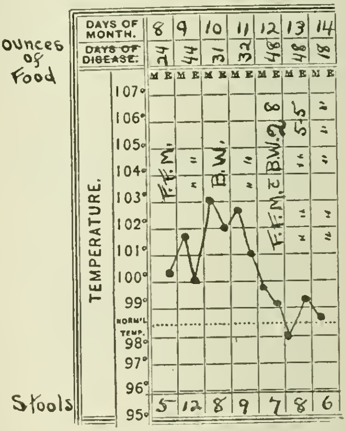
Boy, four weeks old; breast fed for two weeks, then on home modification. Admitted Aug. 29 with the history that two days previous had started vomiting and having frequent movements. Child was poorly nourished with a moderate degree of infection. The previous feeding was so evidently at fault that simply a change to fat-free milk brought the child around very quickly.

Case XVII illustrates that simply change of feeding from one milk to another is sometimes effective.

Boy, fifteen weeks old; breast fed; few weeks previous to admission, on Sept. 2, had had frequent slimy movements and had been vomiting breast milk. A simple change to fat-free milk stopped the vomiting immediately and stools became normal inside of a couple of days.

Case XVIII. Where starvation certainly did marked good; i. e., started first on fat-free milk, did poorly; was starved, then started again on fat-free milk.

Girl, twenty-two months old. For three weeks previous to admission had ten to fifteen movements a day, bloody with mucus. Admitted Sept. 8; poorly nourished child with moderately severe toxemia; was put on weak milk but grew worse, then after three days of starvation was put back on the same milk and did splendidly.



Case XVIII.

CONCLUSIONS.

First: That the best of our present methods of treatment of these cases is starvation, carefully watched, followed by any one of the weak mixtures, low in fat.

Second: That the guide to starting milk in any form is the general picture the child presents rather than the temperature or any one symptom.

Third: That saline infusions are one of the most valuable aids in carrying out the starvation treatment and supplying the liquid quotient.

Fourth: That the benefit of colon irrigation is overestimated, though useful in moderation; once in twenty-four hours being sufficient.

Fifth: That the lavage is a very important factor when the infection has reached or attacked the stomach.

Sixth: That stimulation is of little value in extreme cases.

REFERENCES TO CHARTS.

S. W. Sterile water.
B. W. Barley water (.75 starch).
S. W. or B. W. with 7% S. M. Sterile water or barley water with 7% sugar of milk.
F. F. M. Fat-free milk.
Cond. M. Condensed milk. Figures following abbreviations signify proportions in which these were combined.
B. M. Buttermilk.
S. B. M. Special buttermilk.
Regular modifications are written in full.

DECEPTIVE CONDITIONS IN THE HIP-JOINT.*

BY ROLAND HAMMOND, M.D., PROVIDENCE, R. I.

I think it will be generally agreed that of all the joints in the body, none presents greater difficulties to the physician, whether in diagnosis or in treatment than the hip-joint. This comes by reason of its position, surrounded as it is by thick, powerful muscles and large, strong ligaments. The joint lies deeply buried; part of it is inaccessible to direct physical examination, and the thickness of the parts renders an adequate examination by means of the Röntgen rays difficult in many cases.

It would tax your patience too much to enumerate the long list of conditions in the hip-joint which render the differential diagnosis difficult. I wish rather to emphasize the importance of making a thorough study of the case at hand and the necessity of employing all the known means of precision in order to arrive at an accurate diagnosis.

A diagnosis which rests on clinical signs and symptoms alone will not always be an accurate one and it is often advisable and necessary to employ all the diagnostic means at hand in order to arrive at a clear picture of the case in question. With the continual increase in the number of methods at our disposal, the diagnosis of certain of these conditions in the hip and other joints has been made more accurate; at the same time our vista has been widened and we realize that many conditions formerly grouped under the convenient but shiftless term of "hip disease" are capable of a much more accurate classification and a more intelligent treatment.

A few years' experience in orthopedic work has brought to the writer's attention several cases in which the clinical examination alone in experienced hands seemed to make the diagnosis fairly clear, and it was not until further study or routine examinations had been undertaken that the first diagnosis was often set at naught and an unsuspected or some new condition was found to be present.

A word as to nomenclature: Formerly tuberculosis of the hip was called "hip disease," but since we know the etiology, and the location can be determined in most cases by the Röntgen examination, it is more accurate, and scientific as well, to speak of "tuberculosis of the head of the femur," or "tuberculosis of the acetabulum," or whatever part may be involved. In the same way, we may locate the position of a fracture, as "of the base of the neck of the femur," or "of the neck near the head," or whatever part was fractured, and avoid the unsatisfactory terms of intracapsular and extracapsular fracture.

I shall report briefly a few illustrative cases and endeavor to show the lessons which may be drawn from them. These cases have occurred in the hospital and private practice of Dr. Peckham, to whom I am indebted for the privilege of reporting them.

Case I. G. B., a boy of six, was admitted to the Rhode Island Hospital Aug. 23, 1904, with a fracture near the middle of the shaft of the right femur. He had been run over by an ice wagon and was suffering severely from shock and traumatic asphyxia. Five days later the fracture was reduced and the leg put up in vertical extension. Two weeks later a Röntgen plate showed slight overlapping of fragments. Seventeen days after the first reduction, the extension having slipped, a plaster spica was applied with the leg horizontal. One week later the temperature began to show daily excursions from 99° to 102° with pain which seemed to point to the hip as a possible cause. A Röntgen plate showed some haziness about the hip, which seemed to confirm the suspicion, and he was transferred to the orthopedic service. Under extension on a Bradford frame the acute symptoms subsided and the temperature returned to normal. He was then put in a plaster spica from axilla to toes and remained comfortable after this for several weeks. Two months after the original injury he was given 4 mgm. of tuberculin and a marked reaction obtained. He remained in the hospital two months longer on account of several inexplainable rises in temperature occurring at irregular intervals. He was sent home Jan. 1, 1905, wearing a hip splint. For the past three years he has been passing through the convalescent stage of hip tuberculosis. For two summers he has been at the seashore branch of the Rhode Island Hospital and has now graduated from a splint to a protective plaster spica. He is at present at the Allen Hospital, the seashore branch of the Rhode Island Hospital, doing well. This case illustrates a tuberculosis of the hip following fracture of the shaft of the femur and the diagnostic picture made complete by the Röntgen examination and the tuberculin reaction.

Case II. F. McG., a boy of sixteen, entered the Rhode Island Hospital April 26, 1907. Ten months before this, while pitching hay and standing braced, a boy fell on to his right leg just above the knee. He immediately felt pain in the hip and knee and walked lame for two weeks. He apparently recovered from this injury and was well up to three weeks before entering the hospital, when he jumped from a wagon and in some way twisted his leg. Following this accident he had more pain in the hip and walked lame, but no fever nor night sweats.

On examination there was eversion of the right leg; the thigh was fixed on the pelvis in a position of slight flexion, outward rotation and abduction. The great trochanter was at or slightly above Nélaton's line and Bryant's triangle was correspondingly shortened. The right leg was $\frac{5}{8}$ inch shorter than the left, measured from the anterior superior spines to the internal malleoli.

Here was a case in which, from the history and clinical examination, a tentative diagnosis of fracture of the neck of the femur seemed probable, but to our surprise the Röntgen plates showed no fracture nor evidence of bone destruction. A few days later 0.0035gm. tuberculin gave a marked positive reaction, and a diagnosis of tuberculosis of the hip-joint was made. This patient was kept in bed with traction until some flexion and abduction deformity were overcome. He was then fitted to an ambulatory hip splint, which he is now wearing. The patient is doing well, living an outdoor life and is apparently on the road to recovery.

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* Read before the Providence Medical Association, June 1, 1908.

Case III. D. LaT., a girl of eight years, came to the Out-Patient Department of the Rhode Island Hospital, April 6, 1907, referred as a case of hip disease. The history was that six months previously she had come into the house one evening complaining of pain in the right hip, which continued for several days. She continued, however, to walk upon the leg. No history of injury was obtained. When seen at the hospital she complained of pain when bearing weight upon the leg.

Examination showed flexion to be normal, rotation nearly so and slight limitation to hyperextension and to abduction. A Röntgenogram showed an old fracture of the neck of the femur.

Case IV. M. C., a boy of seven, was seen Dec. 9, 1907. He had been well until four weeks previously, when he complained of pain in the left leg near the knee. For two weeks before seeing him he had had pain in the left hip and limped on walking. There was no history of injury.

Examination of the hip showed nothing except slight limitation to hyperextension. The child was not suffering pain when seen. The parents were instructed to keep the child quiet and to return in two weeks for observation. Here was a case presenting mild symptoms and a slight limitation to hyperextension. Three days after seeing the child, however, the hip became suddenly extremely painful and sensitive and the patient was in much pain. He was sent at once to the Rhode Island Hospital. The leg was held rigidly in extension and there was tenderness over the hip and thigh down to the knee. The thigh was uniformly swollen and was 1½ inches larger in circumference than the right. The Röntgen plate showed a well-defined area of lessened radiability just below the great trochanter, and at one point a small break in the cortex was to be seen. On account of increased swelling, and temperature ranging from 100° to 103°, an operation was performed. This osteomyelitic area was opened and a pint of reddish, odorless fluid obtained. An opening one inch in diameter was found leading down into the marrow. The cavity was thoroughly irrigated, the incision was closed and the cavity drained by a counter incision on the outer side of the thigh. The sinus is now closed and the patient, having gone through an attack of scarlet fever, has made a good recovery. In this case the Röntgen examination was of the utmost importance in arriving at a correct diagnosis. The organisms from the fluid could not be identified by the pathologist.

Case V. H. S., a boy of thirteen, entered the Rhode Island Hospital Nov. 20, 1907. Fifteen months previously he had fallen into a deep hole, injuring his left knee, and a discharging sinus on the inner side of the knee had persisted for three months. Two months before coming to the hospital he began to have pain in the left knee and walked lame. Five days before entrance he had fallen down stairs, again striking his left knee. Since then he had been unable to walk and had severe pain on the outer side of the knee and somewhat in the hip also.

Examination showed a tender scar on the inner side of the left knee below the condyle. Both legs measured the same, but he was very fleshy, and it was very difficult to locate accurately the anterior superior spines, so that it is possible there may have been some slight shortening. There was no deformity nor limitation of motion in the spine, hip or knee. A Röntgen examination was made. Nothing was found in the knee, but the plate of the hip showed a separation of the upper epiphysis of the left femur. Two days later 0.002 gm. tuberculin was given but no reaction obtained. A tuberculosis was pretty satisfactorily ruled out by the tuberculin reaction and the Röntgen examination and the leg was put up in plaster from the toes to the axilla with extension and abduction of the leg to 45°. The spica was removed in a little over a month and the epiphysis found by Röntgen plate to be in good position. The patient left the hospital after a two months' sojourn and now (five months later) walks with but a slight limp.

Here is a case of traumatic separation of the epiphysis of the upper end of the femur which, from the history and symptoms, might have been confused with tuberculosis, if the Röntgen ray and tuberculin examinations had not been made.

The above cases all illustrate conditions in the hip-joint which have been positively diagnosed after careful examinations have been made. As illustrating the negative side of this question I will report briefly a case which will serve as an example of a fairly numerous class in which the initial symptoms rapidly clear up and what might have been a serious case turns out to be of little moment and eventually comes to be classified under the unsatisfactory term of "no diagnosis."

A boy of five was brought to the office for a limp of a few days' duration. There were no subjective symptoms. Examination of the spine and extremities was negative except for a slight limitation to hyperextension. The Röntgen plate showed nothing abnormal. Tuberculin was not given. The child was kept quiet at home for a week and on returning for examination was to all appearances perfectly well. There was no limp and no restriction of motion anywhere. At this visit the mother was able to add to the history, of which she had been ignorant when first seen. A few days before the first visit, while playing some rough games, the boy had been thrown down and jumped upon by other boys. It is probable that the hip received a severe wrench at the time, which accounted for the symptoms. Seven months have now passed and no change has been noted in his condition.

Tumors involving the bone, both benign and malignant, in the early stages are frequently confused with tuberculosis and all the methods of diagnostic precision which we possess often fail of an accurate diagnosis. This is especially true in the case of benign bony tumors and bone cysts, which often present the greatest difficulty in correct interpretation.

I have not attempted to mention all the conditions in the hip-joint which might be confused with tuberculosis, but only those which have come under my observation. In the above cases the clinical examination alone in experienced hands was deceiving and it was only when further study, such as the Röntgen examination and the tuberculin test, was made that the diagnosis could be made certain.

It seems fair to assume that we can no longer depend on the history and clinical examination alone for the diagnosis of the various pathological conditions found in the joints and especially the hip. Every known means which will add to the accuracy of the diagnosis should be employed and even then the number of obscure cases will be more numerous than we could wish.

ERYTHEMA MULTIFORME WITH VISCERAL LESIONS.

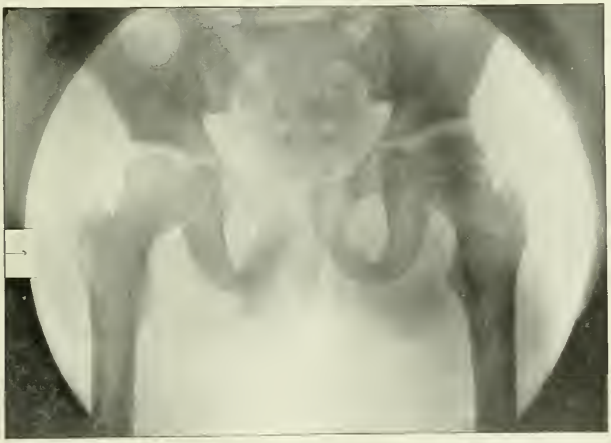
BY J. N. HALL, M.D., DENVER, COLO.

While this title reads " erythema multiforme " it should be understood that the manifestations in the skin comprise also lesions which might be classified under the headings, purpura, urticaria and simple erythema. Osler notes particularly the extremely varied character of the skin lesions in the cases he has collected.

Through the kindness of Drs. A. H. Williams, E. G. Shaffer and R. G. Morrison, with whom I

a quarter of an inch across or less, but no extensive erythematous lesions. Careful examination revealed no reason for more than mere consideration of the possibility of gastric crises of locomotor ataxia, lead poisoning, gallstone disease, appendicitis, gastric ulcer, organic intestinal obstruction or other trouble than that mentioned.

We decided that the abdominal symptoms were the internal manifestations of the same trouble which had caused the erythema multiforme, and that, consequently, surgical intervention was not indicated. Under rectal feeding, purgation with calomel, laxative enemata, spartein, and later, Fowler's solution, the patient made a good recovery, and went home in two



Case IV. Osteomyelitis of femur. Arrow points to osteomyelitic area.

attempts. There was no delirium; no hemorrhages were noted, excepting later in the urine.

The urine now had specific gravity of 1,030, very acid, no albumin, no sugar. The erythematous lesions were present on certain days, but nearly disappeared at other times. Although a definite intestinal obstruction was carefully considered, Drs. Williams and Shaffer wisely decided to delay, because the signs and symptoms were not sufficiently positive.

I found him in about the condition indicated. The spleen was moderately enlarged. The urine now showed a trace of albumin, many red cells, leucocytes and innumerable hyaline and slightly granular casts. There were many papular, dull red spots over the body,

mentioned on the palm and the backs of the feet still persisted.

Treatment was wholly symptomatic, directed especially to the relief of the headache and joint pains.

Convalescence was rapid and he left the hospital well, early in the third week.

It is to be carefully noted that, of the 14 leading phenomena mentioned as occurring in Osler's group of 29 cases, the number present in any given case varied between 4 and 10.

1. Purpura is noted in 22 cases. 2. Urticaria is noted in 17 cases. 3. Edema is noted in 5 cases. 4. Erythema is noted in 14 cases. 5. Fever is

noted in 14 cases. 6. Colic is noted in 25 cases. 7. Vomiting is noted in 15 cases. 8. Diarrhea is noted in 5 cases. 9. Hemorrhages are noted in 14 cases. 10. Nephritis is noted in 14 cases. 11. Albuminuria is noted in 15 cases. 12. Arthralgic pains, 17 cases. 13. Endocarditis, 3 cases. 14. Enlarged spleen, 3 cases.

Various other manifestations were noted in one or two cases only.

In our first case there were edema, erythema, fever, colic, vomiting, hemorrhages (from the kidneys), nephritis (including the albuminuria, classified separately in the article quoted), arthralgic pains and enlarged spleen.

In Case II, purpura, edema, erythema, fever, hemorrhage, arthralgic pains and the group of symptoms relating to the nervous system, coma, hyperesthesia, photophobia, *et cetera*.

The first case is like many of those heretofore reported. The second varies in detail from any on record, so far as I can learn, but the general picture conforms to the type.

Thus Case I, in the series quoted, had delirium in recurring attacks, while Case XV had five or six attacks of aphasia and hemiplegia, alternating or recurring. Our second case had chiefly the symptoms of meningeal irritation as noted above. It emphasizes, I think, the idea that we must be prepared for the utmost diversity in the internal manifestations of the group of skin diseases we are considering.

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Clinical Department.

THE TREATMENT OF ECZEMA.

BY R. L. SUTTON, M.D.,
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In the therapy of so protean a disease as eczema, it is the height of absurdity to imagine that one single drug or preparation will prove curative or is even applicable in every case. As time goes on, however, and we gain a more complete and exact knowledge of the pathology of this condition, even though its etiology does remain obscure and undefined, our ability to rationally combat it materially increases.

While the internal treatment is, as a rule, largely symptomatic, the enforcement of proper hygienic measures is to be advised in every instance. The frequent use of soap and water is contra-indicated, and especially so if the water is hard or the soap contains excessive amounts of uncombined alkali. An occasional sponge bath in soft water, heated until comfortably warm to the touch, and containing 2 oz. of bran or oatmeal to the gallon, is more often beneficial than otherwise. If soap is used at all it should be bland and non-irritating in character. The simple superfatted soaps devised by Unna answer admirably, but they must be recently prepared.

If grease and dirt collect on an affected surface it is best to gently swab the part with a soft rag dipped in deodorized benzine, and immediately follow this with a thorough coating of olive oil.

I have found the milk feeding advocated by Dr. Bulkley an extremely valuable procedure, but it must be properly carried out if the best results are to be obtained.

Commonly, unless the patient is engaged at hard physical labor, it is wise to completely eliminate meat from the diet for a considerable period of time. I find it simpler and more satisfactory to gauge the amount of allowable proteids by repeated examinations of the urine.

Alcohol, because of its effect on the peripheral circulation, is to be forbidden altogether.

In babies and young children eczematous inflammations of the skin are very frequently associated with, and apparently dependent on, malnutrition and an insufficient intake of fats. Cream feeding, with or without a teaspoonful dose of a 10% aqueous solution of ichthyol, three times daily, as an intestinal antiseptic, is far better than the host of external applications so often advised.

That the general health should receive attention goes without saying. Constipation especially, when present, is to be remedied and it is well to always bear in mind that the more nearly we approximate Nature's methods the more likely we are to secure satisfactory and lasting results. The importance of a regular morning hour for this duty is to be impressed upon the patient. Whole wheat and Graham bread, corn "gems" or shredded wheat biscuit with cream, together with stewed or fresh fruit, should be eaten at breakfast. If a drug must be used, I prefer one of the cascara preparations.

If anemia is a factor, iron or arsenic, alone or together, may be ordered, or Startin's mistura ferri acidi given a trial. While the proportion of iron in the latter is quite small, the amount taken up by the body is very considerable and I have found it a most excellent hematinic.

In discussing the topical treatment of this disease it is essential that we divide it into types, and the simpler the classification the better. The terms "acute," "sub-acute" and "chronic," with reference to the stage and not the duration of the affection, while not as clear-cut and definitive as could be desired, serve fairly well.

From a histo-pathologic standpoint there are three morbid conditions present in all forms of the disease. These consist of a parakeratosis (which is really an irregular, excessive cornification), an acanthosis (a proliferation of the prickle cells, with consequent increase in thickness of the epithelial layer), and an excess of moisture, with resulting separation of the cells (which Unna characterizes as a "spongy metamorphosis").

In the first stage of the disease, when the condition is identical with a simple dermatitis and all of the changes incident to an acute inflammatory process are present in the upper part of the corium, the excess of moisture, in the form of serum, gives rise to edema. If the process continues, acanthosis results from hyperproliferation of the rete, and, finally, as a result of this rapid formation of cells, we get a parakeratosis, although the outer layers are immature and imperfectly cornified.

In the acute and the early exudative stages of the sub-acute forms, when the skin is hot, tense and shiny, with serum oozing out on the surface, and occasional thin-walled vesicles scattered about, a soothing astringent is indicated, and one of the most satisfactory is an alum-lead acetate mixture:

℞

Alum,	20.0
Lead acetate,	35.0
Water,	400.0

Mix and filter. Apply this solution to the skin by means of soft gauze compresses, not too tightly bandaged.

At the end of twenty-four hours the surface will be bleached and wrinkled and there will be marked lessening of the edema and little or no elevation of temperature.

In many instances, and especially if, an hour or so after the astringent has been discontinued, the skin appears more damp and soggy than it should, the free use of a bland, inert, impalpable powder (such as one consisting of equal parts of zinc oxide and zinc stearate) will complete a cure.

The powder protects the surface, promotes evaporation (by increasing the evaporating area) and acts as an absorbent.

Should the affected area feel dry and exhibit a tendency to exfoliation, with more or less pruritus, fats are indicated, and nothing is of greater value than carbolized zinc oil:

℞

Phenol,	5.0
Zinc oxide,	60.0
Olive oil,	40.0

Mix thoroughly. Apply by means of soft cotton cloths, two or more times daily.

Should the case, when first seen, present a dry, sub-acute inflammatory condition, the skin being red, infiltrated and covered with irregular, ill-defined scales, while itching is intense and continuous, a lotion containing liquor carbonis detergens should be alternated with the zinc oil:

℞

Liquor carbonis detergens,	15.0 to 30.0
Zinc oxide,	20.0
Starch,	20.0
Glycerine,	25.0
Water, sufficient to make	100.0

Mix. Shake well and apply by means of a cotton swab several times daily.

Although the proportion of the active ingredients in this prescription appears to be excessive, from a theoretical point of view, in actual practice the results are excellent.

The lotion can be used at intervals through the day and the zinc oil, plain or carbolized, applied at night.

In the thick, hyperkeratotic, chronic form of the disease, which is most frequently seen on the palms and the anterior surfaces of the wrists, an agent which will loosen and dissolve the outer layers of superfluous epithelium without giving rise to additional inflammatory changes in the corium is needed, and none is better than salicylic acid:

℞

Salicylic acid,	2.0 to 5.0
Wool fat,	20.0
Vaseline,	25.0

Mix and apply twice daily on smooth cotton cloth, overlaid with gutta percha tissue and a snug bandage. At the end of twenty-four or thirty-six hours the keratolytic action has usually proceeded far enough. All salve and loose epithelium is removed by means of a soft cloth and deodorized benzine, and zinc oil applied. The process is repeated, if necessary, until sufficient reduction is secured.

This is also a very good method for treating the nails when they are involved. I believe it is much better to employ one simple, dependable agent like this all of the time, familiarizing oneself with the action and effect of the various percentages and learning positively what to expect from their application, than it is to be constantly shifting from one drug to another, with consequent uncertainty as to the result.

When the disease occurs in small, circumscribed (nummular), slightly thickened patches, which are as erratic in their distribution as they are resistant to treatment, no remedy has given me such satisfactory results as ordinary coal tar.

I do not refer to pix liquida, which is an empyreumatic oleo-resin obtained by the destructive distillation of various woods of the natural order Coniferæ, but to the dark, thick, semiliquid substance, which is a product of the dry distillation of bituminous coal. It may be obtained from any of the large roofing or paving companies and is an extremely efficient aid in this particular type of the disease. It is thickly applied to the affected area and covered with a bit of gauze. In the course of four or five days, as a result of the ensuing irritation, the skin will exfoliate, leaving a red, inflamed patch. A bland ointment is then applied until the inflammation subsides when, if needed, a second coating of tar is painted on. One application, however, is usually sufficient.

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Medical Progress.

PROGRESS IN THE THEORY AND PRACTICE OF MEDICINE.

BY HENRY A. CHRISTIAN, M.D., BOSTON.

SERUM DIAGNOSIS OF SYPHILIS.

For years syphilis has been the subject of medical investigation. Its pathology, its etiology, its diagnosis and its treatment have been studied by a throng of physicians from the earlier days of medicine down to the present time. In the last few years, however, notable advance has been made in our knowledge of the disease, particularly of its diagnosis. The discovery of the spirochete pallida in syphilitic lesions and the study of experimental syphilis in apes have been prominent factors in this advance. The application of the methods of serum investigation to the problem of the diagnosis of syphilis has yielded results recently which promise such wide-reaching utility in medical practice that a review of this work seems of interest at this time.

In 1906 Wassermann and his colleagues, Neisser and Bruck, published a method for the serum diagnosis of syphilis which they had tested out to a certain extent on apes inoculated with syphilis. The method was based on the principle of complement fixation, a phenomenon first observed by Bordet and Gengou. This may be described in brief as follows: If red blood corpuscles from one species of animal (*a*) are inoculated into some other species of animals (*b*), and these inoculations are repeated several times, the serum of the inoculated animal (*b*) acquires the property of quickly dissolving in vitro at 37° centigrade the red blood corpuscles of the animal species (*a*) used for inoculating; the red blood corpuscles (*a*) are hemolyzed by the serum (*b*). This hemolytic action is dependent on the presence in the serum of two substances: complement, present in the fresh serum of every animal, which can be made inactive by heating for one hour at a temperature of 55° centigrade, and amboceptor or immune body, which results from the reaction of the animal against the injected red blood corpuscles and which is not inactivated at 55° centigrade. Consequently, if serum from an animal (*b*) which has received injections of red blood corpuscles is heated to 55° centigrade and then added to red blood corpuscles from the other animal (*a*), no hemolysis takes place, because the complement needed for the reaction has been rendered inactive by the heating. Now, if to this mixture fresh serum from any animal is added, hemolysis takes place because the necessary free complement has been added. If bacteria or other albuminoid substance is similarly injected into an animal, an antibody is formed in general nature similar to the amboceptor of the hemolytic reaction. This latter antibody has the property of fixing itself, on the one hand, to the bacteria or other substance used in its production by inoculation, and, on the other hand, to complement. All such substances which, when injected into animals, are capable of producing antibodies, are called antigens. If to an antigen-antibody mixture complement is added and allowed to stand for some time and then this mixture is added to a mixture of hemolytic amboceptor and suitable red blood corpuscles, no hemolysis follows, because the complement necessary for the hemolytic reaction has already been fixed in the first mixture and so is not free to bring about the hemolytic reaction. This principle had been applied by Bordet and Gengou and by others to the diagnosis of various bacterial diseases, since the serum of individuals infected with a given bacterium would contain a specific antibody and the presence of this antibody could be determined in accord with whether complement had been fixed or not when in contact with a mixture of the serum under investigation and the proper antigen.

Since the causative organism of syphilis could not be obtained in culture for use in the antibody-antigen mixture required for the diagnosis of the suspected syphilis antibody in the serum, Wassermann, Neisser and Bruck used instead an extract made from the organs of cases of fatal congenital syphilis known to contain the spirochete pallida, and with this carried out the technic of Bordet and Gengou in the study of the serum of apes which had or had not been inoculated with syphilis. As a hemolytic serum they used serum of rabbits previously treated with sheep red blood corpuscles, and as complement fresh guinea pig serum.

For carrying out these tests the following solutions were thus used by Wassermann, Neisser and Bruck:

1. Extract of liver or spleen of a syphilitic newborn. This extract was made by extracting 1 gm. of chopped organ with 5 ccm. of normal salt solution containing ½ of 1% phenol. The mixture was shaken for twenty-four hours and then centrifugalized to obtain a clear liquid.
2. Serum of ape to be tested.
3. Fresh guinea pig serum.
4. Inactivated serum of rabbits which had been previously inoculated with sheep red blood corpuscles.
5. A 5% suspension of sheep red blood corpuscles.

Their tests with these solutions showed that from certain apes, which had been previously inoculated with syphilitic virus, a serum was obtained which, mixed with an extract of a syphilitic liver or spleen, had the power of fixing complement so that when this mixture was added to inactivated hemolytic serum and suitable red blood corpuscles, no hemolysis occurred. Serum from uninoculated apes they found did not have the power of fixing complement. This complement fixation they regarded as proof of the presence in the serum of these apes of the antibodies of syphilis, and they stated that the reaction forms a specific sero-diagnostic method for syphilis.

In a later publication, Wassermann, Neisser, Bruck and Schucht give a more detailed discussion of their investigations and point out a number of sources of error which must be guarded against in making these serum tests if the results of the tests are to have diagnostic value. Notwithstanding the complexity of the method and the possibilities of errors in technic, they believe that the test is of great practical value, but they insist that it must be carried out only by those trained in serum methods and in properly equipped laboratories. They strengthen their claim that the reaction is specific for syphilis by failure to obtain it with the serum of 358 non-syphilitic men and 89 apes never inoculated with syphilis. In one man, not believed syphilitic, a positive reaction (fixation of complement as evidenced by inhibition of hemolysis in the test) was obtained, but, as subsequent work has shown, it is not possible to exclude syphilitic infection in some cases, even though no history suggesting syphilis can be obtained from the individual.

In these two publications had been elaborated a technical method which appeared capable of yielding diagnostic information when applied to the serum of certain apes previously inoculated with syphilis. If similar results could be obtained for man a very important advance had been made. To determine this, extensive clinical application was necessary and was soon made.

The first clinical studies of the reaction, now usually known as the Wassermann reaction, were published by Wassermann and Plaut. They tested by this means the possible presence of syphilis antibodies in the spinal fluid of patients suffering from general paralysis and obtained a positive reaction in 32 of 41 cases and a partial reaction in 4 others of the number. They controlled these results by a study of the spinal fluid from 22 patients not suffering from any syphilitic affection and giving no history of syphilitic infection. All of this latter number gave negative reactions. Since the publication of Wassermann and Plaut a number of investigators have tested for the presence of antibodies in the spinal fluid. Weil and Braun obtained a positive reaction in 10 out of 12 cases of general paralysis, in 1 case of cerebral syphilis and 2 cases of tabes dorsalis; 5 cases of psychosis, not general paralysis, yielded negative tests. Schutze studied the spinal fluid from 12 cases of tabes dorsalis and in 8 of these obtained positive reactions. In a later publication Plaut reports positive reactions in 41 out of 44 cases of general paralysis. Morgenroth and Stertz tested the spinal fluid of 25 cases; 8 of general paralysis, all positive; 2 of suspected general paralysis, both negative; 1 of tabes, negative; 3 of cerebrospinal syphilis, 1 positive and 2 negative; 3 of late syphilis negative, and 8 cases with no suspicion of syphilis, all negative. Marie and Levaditi obtained positive reactions in 73% of 39 cases of general paralysis and in 66% of 9 cases of tabes and tabo-paralysis.

Very many more tests have been made of the blood serum than of the spinal fluid. Neisser, Bruck and Schucht obtained a positive reaction in 70% of 163 cases showing lesions or symptoms referable to syphilis and in 58% of 58 cases of latent syphilis (history of previous infection, but free from symptoms or lesions at the time of the observation). Citron obtained a positive reaction in 77.5% of 44 cases in which syphilis was suspected, while 36 control cases were all negative. Wassermann and Meier had 27 positive reactions in 39 cases. Michaelis studied 12 cases of undoubted syphilis, mostly late forms, and obtained 9 positive, 1 slight and 2 negative reactions; of 26 cases without demonstrable syphilis, 2 were positive, 1 doubtful and 23 negative.

Fischer and Meier tested 124 cases in a dermatological clinic; of these 8 showed primary, 75 secondary, 8 tertiary lesions; 11 showed no demonstrable syphilis; 15, who gave a history of infection, showed no symptoms; 4 were hereditary syphilis in children; in 3 the clinical diagnosis was uncertain; of those affected with syphilis 83.7% gave a positive reaction. Meier found that 81.7% of 181 cases with definite syphilitic disease gave positive reactions, while all of 21 non-syphilitic cases gave negative reactions. Müller tested 1,100 specimens of serum. About half of these were from non-syphilitic cases and these, almost without exception, showed a negative reaction. Of 197 cases of definite syphilis, all but 4 gave positive reactions. Michaelis and Lesser found a positive reaction in 74% of 63 cases apparently syphilitic; of 18 cases of cutaneous syphilis 85% gave a positive reaction, and 18 out of 20 cases of general paralysis were positive. Kroner obtained positive reactions in 73% of 30 cases in which history, clinical signs or symptoms pointed to syphilis. Grosz and Volk studied 232 cases; 63 non-syphilitic cases with 61 negative and 2 slight reactions; 33 suspicious cases with 6 positive reactions; 10 cases with primary lesions, 4 positive; 99 cases with secondary syphilitic lesions, 83 positive, and 17 cases of late syphilis; 13 positive reactions. Fischer examined the serum of 250 cases, mostly cases of primary and fresh secondary syphilis. Almost all were undoubtedly cases of syphilis and 84% gave positive reactions. Blaschko examined 400 cases; of these 63 cases showed a primary lesion and 90% were positive; of 56 cases in an early period of the disease with symptoms, 98% gave positive reactions, and of 67 cases in an early period without symptoms 80% gave positive reactions; of 23 cases in a late period with symptoms 91% gave positive reactions; of 51 cases in a late period without symptoms 57% were positive. By early period Blaschko means the first four years after the appearance of the roseola.

These reports will serve to indicate the kind of results that have been obtained by different observers with the Wassermann reaction. At the recent medical congress held in Vienna, April 6–9, 1908, Wassermann gave an address on the serum diagnosis of syphilis in which he tabulated his own and others' results with the serum reaction. He found that 1,010 control cases had yielded negative reactions and that of 1,982 cases 90% of those with certain syphilitic infection had yielded positive reactions if examined during the presence of manifest symptoms; while 50% of cases of latent syphilis were positive. These tests were almost all made on the blood serum.

It is evident from these reports that a large per cent of cases of syphilis yield a positive Wassermann serum reaction, while tests on non-syphilitic cases are almost always negative. What interpretation can be placed on a positive reaction? Wassermann, in the address previously referred to, states that the serum test is an *absolutely sure, clinically specific* method for the diagnosis of syphilis in that a positive reaction justifies the diagnosis of syphilis, but a negative reaction allows of no positive conclusion as to the absence of a syphilitic affection. Most of the other observers, Neisser, Bruck, Fischer, Meier, Kroner, etc., make very similar statements. The reaction, according to Fischer and Meier, permits only a constitutional but not an organ diagnosis; a patient giving symptoms apparently arising from a given organ may show a positive reaction because he has formerly had a syphilitic infection, not necessarily because there is a syphilitic process at present active and causing symptoms. It seems clear from serum tests that persons who give no history of infection and who have never manifested any symptoms referable to syphilis, may sometimes yield a positive reaction. In some of these cases subsequent evidence points clearly to an actual, though latent syphilis. Mühsam reports such a case in a woman who gave birth to a child which died soon after birth and at autopsy showed evident signs of congenital syphilis.

Some of the authors think that a positive reaction always points to active syphilis. This, however, is not supported by numerous observations and it seems more probable that a serum reaction may persist after all activity of the process has ceased. Kroner reports a positive reaction in a man four years after infection, who married and whose wife bore three healthy children and had no abortions. Moreover, there seems to be no relation between the strength of the reaction and the severity of the infection. The reaction may be positive very early after the primary lesion appears, but a larger percentage of cases gives a positive reaction during the secondary stage; 68% in primary stage and 93% in secondary are the findings of Meier. Years (forty or more) after the infection a positive reaction may still be present. Some believe that therapy has no effect on the reaction, but others have found the reaction to disappear under antisyphilitic treatment. Müller found in 48 cases that 60.4% showed no difference in the reaction before and after treatment with mercury, while 37.5% showed a marked decrease or complete absence of the reaction. A conservative attitude would indicate a repetition of appropriate treatment in cases in which a positive reaction is present, especially when there are symptoms of some pathological condition. According to Blaschko, a positive reaction in itself is not sufficient cause for advice against marriage, but if found, proper treatment should be given in a precautionary way with the possibility of the reaction then disappearing, in which case marriage would be safer.

Not all agree that the reaction occurs only in syphilis. Michaelis and Lesser had a positive reaction in a patient with malaria, who in no way gave any evidence of syphilitic infection. Langstein and Hoffmann had positive reactions in dourine and frambesia. Much and Eichelberg had positive reactions in 40% of 25 cases of scarlet fever. Weil and Braun report some positive reactions in various acute diseases. The difficulty of excluding syphilis in all of these cases is evident. However, the considerable frequency of positive reactions in scarlet fever is against a very narrow specificity for the reaction. Moreover, some recent observers have found that extracts made from normal livers may be used in place of extracts from livers of congenital syphilis and positive reactions still be obtained, though not quite such strong ones as those obtained with the use of extracts of syphilitic livers (Fleischmann, Michaelis, Marie and Levaditi, Weil and Braun and others). This would suggest that not specific antibodies were concerned, but that in syphilis certain substances, which occur under normal conditions, were formed in increased amount.

In the effort to obtain a more stable organ extract for the reaction an alcoholic extract was made and found effective. The solubility of the unknown substance in alcohol suggested that it might be a lipoid and replaceable by one of the pure lipoids. Among others, lecithin was tried and found to work to a certain extent in the reaction. (Wassermann, Porges, Fleischmann and others.) Other lipoids have been similarly used. Sachs and Altmann obtained positive reactions with soaps. Sodium glycocholate and taurocholate, vaseline and other substances have yielded positive reactions with certain sera. All of these observations have served to somewhat modify the opinion at first held that the reaction was a truly specific antibody-antigen fixation of the complement, but it is still generally regarded as clinically specific within certain limits and capable of diagnosing a previous infection with syphilis.

Various technical changes in the method of obtaining the reaction have been suggested, but it is not necessary to discuss them here. Also other methods of serum diagnosis have been introduced, such as the precipitation method; but these require more clinical criticism than they have yet received before they can be accepted as substitutes for the Wassermann reaction. The precipitation of a solution of lecithin by serum from syphilitics may prove a diagnostic method of great service owing to its greater simplicity.

Up to the present time this very important serum test has been studied almost exclusively in Germany and France. A review of the *Index Medicus* to June, 1908, yielded but two papers in American journals, and both of these were based on observations made in a Germany laboratory.[1] In Germany the test is already regarded as of great clinical importance and is receiving much study. A review of the literature impresses one that though not yet fully understood, the reaction promises to be of much value in clinical work. Though it may not prove specific in the way believed by Wassermann, it might be a very valuable aid in diagnosis. It is hoped that a more simplified technic may be perfected so as to allow of its more extensive application. Future study will determine its limitations and range of applicability. If it continues to withstand adverse criticism, the serum diagnosis of syphilis will form the most valuable recent contribution to clinical diagnostic methods.

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[1] In the *Archives of Internal Medicine*, April, 1908, Wollstein and Lamar reported negative findings in the search for antagonistic substances in the serum of syphilitics by the method of complement fixation and inconstant results by the precipitation method. In the same journal, Aug. 15, 1908, Mayer and Proescher report 75% positive reactions in the serum of syphilitics using a sodium oleate solution as an "antigen."

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Reports of Societies.

AMERICAN CLIMATOLOGICAL ASSOCIATION.

The 25th Annual Meeting.

(Continued from No. 9, p. 281.)

Dr. Guy Hinsdale, of Hot Springs, Va., read a paper on

GRADUATED LABOR IN THE TREATMENT OF PULMONARY TUBERCULOSIS.

Attention was called to the difference between the Nordrach system of treatment, which involves the use of exercise as well as fresh air, and the Dettweiler system, which enjoins rest and superalimentation. Brehmer advocated hill climbing; Walther advises graduated walking exercises. At the Brompton Hospital Sanatorium near Frimley, a few miles out of London, they have adopted the use of garden and farm work with great success. The work is most carefully regulated, and no one with a temperature of 99° or 99.5° F. or more is allowed to do any manual work. The employment of patients in out-of-door occupations has a healthful effect on both mind and body. If the patient is at first sullen and apathetic the improvement in physical condition quickly begets a cheerful mental attitude. Considerable tact and personal influence were exerted to get the patients to carry out a plan which involved increasing labor and measures that were generally considered positively harmful. The suitability of cases for graduated labor rests on a very careful physical examination, importance being laid on the general muscular and physical development and on the temperature taken in the mouth. The grades of work consisted of walking from one half to ten miles daily; using a small shovel; using a large shovel; using a five-pound pickax; using a pickax for six hours a day.

The effect of graduated labor is to produce a series of auto-inoculations, or intoxication effects, and corresponding immunizing responses ensue. Sir Almroth Wright's dictum is that "where in association with a bacterial invasion of the organism bacteria or bacterial products pass into the general lymph and blood stream, intoxication effects and immunizing responses, similar to those which follow upon the inoculation of bacterial vaccines, must inevitably supervene."

DISCUSSION.

Dr. Frederick I. Knight: A word on this ought to be offered. We have all observed the bad effect in young men on whom was enforced a life of idleness. A patient who is able to work ought to be set to work; it is nothing new, but what we have got to insist upon is that rest for some is just as important.

In the sanatorium it is hard to get patients to do the ordinary work of the sanatorium. They would rather leave than do it, but we should teach them some proper occupation which can be used afterwards to make money.

Dr. Baldwin: It is not that exercise is bad in tuberculosis, but when it is at the wrong time or in the wrong place and the improper management of exercise. We know that the sanatoria have been trying to convince people that rest is the important thing, and now there is a tendency to take up this exercise matter and run it to the ground, with the disastrous results of old times as a consequence.

Dr. Hinsdale: I have learned that graduated labor, according to the system described, is employed at the King Edward Sanatorium at Midhurst, England. In the United States it has not yet been employed in such a systematic way. In the United States Army General Hospital at Fort Bayard, N. Mex., which is also an asylum for discharged soldiers from the regular army who have tuberculosis, graduated labor is not employed as a means of cure for the reason that the regulations of the Soldiers' Home do not permit labor to be required of inmates without compensation. When, however, a soldier has been examined by a board and is pronounced to be cured he is given work for a month in the hospital garden and then is again examined by the board before he is returned to duty. A few patients are given work of various kinds, largely out of doors, for which they receive a small compensation. No man is allowed to work until the medical officer in charge of him certifies in writing that the man is able to work without injury, and such certificates are not given except to cases in which the temperature is normal, the general condition apparently good and signs of tuberculous activity in the lungs entirely absent.

Dr. Vincent Y. Bowditch, of Boston, read a paper on the

PRESENT STATUS OF SANATORIUM TREATMENT FOR TUBERCULOSIS.

This paper will appear in a subsequent issue of this Journal.

DISCUSSION.

Dr. Charles E. Quimby: I cannot agree with Dr. Bowditch on one point. The difficulty is that the profession has not been through the necessary sanatorium treatment to teach them to handle it. The medical profession needs the sanatorium treatment more than the tuberculous patient does at present. I say this not in jest, but earnestly. The difficulty has been that the medical man is so utterly unstable that he neither remembers what this treatment has done nor is he appreciative of what is being accomplished by it.

Whatever we forget, let us remember that the first law of God was to keep a man's system clean. The first and principal treatment for tuberculosis is cleanliness of the body.

The difficulty seems to lie in the apparent inability of the profession to recognize that no one thing can ever cure tuberculosis. We are still hunting for a *cure;* hence a rediscovered method is tested and judged on that basis and not as a term in a sum total.

As a result the younger men and the public are led to stake everything on the one measure and to suffer proportionate discouragement from its apparent failure. When we learn to talk of *the* treatment, not *a* treatment, of tuberculosis, and no longer let slip the help that we already have when we snatch at the phantom of the one thing we hope for, our approach to success will not be delayed by so many hours of mourning over the mistakes of unrestrained enthusiasm.

Dr. Lawrason Brown, Saranac Lake: I think the time has come when we must realize that only a very small percentage of people with pulmonary tuberculosis can be treated in sanatoria, but that the vast majority of patients can be treated very much better in sanatoria than outside, and that those who work in dispensaries in the large cities where they can see the real struggle taking place appreciate the truth of this. There are not enough sanatoria for all those who need treatment, and in these cases the treatment must be in their homes. The results of sanatorium treatment can be divided into two classes: (1) The immediate results which I think are of very much less importance than the ultimate results. (2) The ultimate results. It would be unfair to compare the ultimate results of those who remain in health resorts with those who have to return home to unhygienic surroundings. Consequently ultimate results from some sanatoria cannot be accurately compared.

Dr. Abraham Jacobi: There is a necessity of treating such patients in sanatoria. I feel that necessity very intensely and have tried scores of times to get patients into sanatoria. I speak principally of poor patients. Not for a year have I been able to get any poor patients into sanatoria. New York is too poor, they cannot afford it. If they could afford it, certainly we should have sanatoria. Perhaps not.

I know that I always appear like a heretic when I speak of medicines in tuberculosis, but still, I never have been able to conceive why poor, or rich people either, should be deprived of the use of medicines because they have tuberculosis. I have always been of the opinion that there is nothing better than arsenic as a tissue builder, particularly in tuberculosis, and I could never see why sanatoria, while they are very useful with air and light and food treatment, etc., should not combine their treatment with medicines. I believe it is the one-sidedness that should be done away with. For the hundredth time I repeat that these nearly twenty years I know I have had favorable results, amongst other things, with persistent guaiacol treatment.

Dr. Charles L. Minor, Asheville, N. C.: Whatever the adaptability of the sanatorium, I think that where it is available it is the most satisfactory method, although we must remember that the patient who is treated at home is treated under the sanatorium methods. There should be no difference between the methods used in one or the other save that in the sanatorium the patient has the great advantage of the stimulus of the example of the other patients.

Dr. Stone: I am in the habit of putting things the other way and saying that the important thing was the home treatment and that patients should be sent to the sanatorium after the disease had been diagnosed at the home, — to be put to school to learn how to live. This is much easier to accomplish at the sanatorium, and the patients having obtained their education are able to carry it out for themselves.

It seems to me, however, that the sanatorium has its tremendous importance that cannot be overestimated.

Dr. Lawrason Brown: I should like to emphasize the necessity of what you might call the "night sanatorium." I think that when patients are returned to their work very many are not able to live in proper hygienic surroundings. When many patients return to the larger cities and have to resume their activities they are not so placed that they can sleep out at night. Sleeping out is not so important for those who can be out eight or ten hours a day, but it is vitally important for those who must work indoors. It is one of the most important factors for those who are engaged in tuberculosis work in the larger cities.

Dr. Rochester, Buffalo: I wish to state that I think the home treatment of tuberculosis is a poor substitute for sanatoria. Wherever a sanatorium can be procured, it is the thing. I think it is *the* way of treating tuberculosis.

Dr. Norman Bridge, of Los Angeles, presented a paper on

PULMONARY ACTINOMYCOSIS; ITS GREAT RELATIVE FREQUENCY.

Read by title.

The paper was based on the discovery of seven cases in full adult men within a single year, coming from different quarters of the United States. Microscopic findings proved the diagnosis.

Dr. Francis H. Williams, of Boston, read a preliminary note on a

METHOD FOR MEASURING THE RELATIVE DENSITY OF DIFFERENT PARTS OF THE LUNGS BY MEANS OF THE X-RAYS.

The method is based on the premise, founded on experiment, that the soft tissues of the lungs in health are much lighter, when examined by the x-rays, than an equal volume of water, but, when made nearly solid by some pathological exudation, are about as dense as water. The density of normal and diseased areas may be compared with that of water and expressed in terms of water as, for instance, so many inches or centimeters of water.

To carry out this method an x-ray apparatus with a readily adjustable light is necessary and an instrument which Dr. Williams calls a densitometer. This consists of a glass tube about an inch in caliber, ten inches long and open at the top with a piece of rib placed across the middle of the opening. The bottom is made of cork which offers little obstacle to the passage of the x-rays. On one side of the tube, near the base, is a small opening to which a rubber tubing is fastened and through which water can flow in or out of the main tube from a reservoir and thus lower or raise the height of the water in the large tube. There is a scale on the outer side of the glass tube.

To use the instrument the x-ray tube is placed below the patient, who is lying on a stretcher, and the x-light adjusted until a rib is just visible. The densitometer is then put beside the patient and the water is allowed to flow into it until the piece of rib across the top of the densitometer tube is also just visible. The depth of water in the tube, which is shown by the scale, represents, after allowance is made for the chest walls, the thickness of which varies in different individuals, the density, in terms of water, of the part of the thorax examined. A similar measurement of each side of the thorax enables the physician to compare their respective densities. This instrument is useful in measuring the changes occurring in pulmonary tuberculosis, emphysema or pneumothorax, the increase in density due to the presence of pleuritic fluid or compression of the lung by that fluid. Dr. Williams described a fluorometer, for measuring the amount of the x-rays, and involving somewhat similar principles of measurement. In this case the patient is also examined lying on a stretcher with the x-ray tube below him. Enough x-light is then allowed to pass through the patient to make any given portion of the chest just visible and this amount is measured by the fluorometer.

Dr. Thomas Darlington, Commissioner of Health, New York City, read a paper on the

CAUSES OF MORTALITY FROM HEART DISEASE IN THE UNITED STATES.

Public health officials have been compelled to take cognizance of the persistently increasing death-rate from heart disease. Dr. Darlington has taken pains to ascertain the comparative mortality from heart disease and kidney disease for 1907 and that of fourteen or fifteen years previously, as observed in twenty-six cities of the United States and Canada. The increased mortality from heart disease was found to be general. Minneapolis, St. Paul, Milwaukee, Detroit, Buffalo, Boston, Lawrence, Portland (Me.), Concord, Providence, New York City, Philadelphia, St. Louis, Chicago, Cincinnati, Washington, Los Angeles, Denver, New Orleans and Nashville show an increase. In the latter case the increase in fifteen years is about double. A slight decrease is noted in Montreal, Omaha, Atlanta, Macon, Georgia and in Honolulu; in the latter case there is an apparently remarkable increase in kidney disease. It was noted that the latter bears an important relation to diseases of the heart, and consequently many deaths due to kidney affections were formerly listed under the heading of heart disease. The general increase noted in the United States cannot be dependent on climatic conditions; nor are the infectious diseases responsible. Dr. Darlington believes the cause lies in a temperamental strain accompanying the so-called "American spirit of progress," in high pressure work in school and in athletic sports. The effect produced by high-strung nervous tension induced by modern methods of social and business competition must be regarded as a causative factor in the production of functional and, ultimately, organic cardiac disease.

The medical profession has before it an opportunity of great vital moment in teaching the doctrine of right living, advocating a saner and more wholesome attitude towards life and standing as a unit against the false standards of material gain and advancement obtained by the sacrifice of the normal, healthful and peaceful attribute of calm mental poise, equable temperament and well being. Equanimity is the need of the times and the need of the people.

DISCUSSION.

Dr. Quimby: Dr. Darlington spoke of the remarkable increase in heart diseases among children. I would like to ask Dr. Darlington if he has given any thought to the marked decrease of infant mortality in New York of recent years, with its consequent preservation of weaklings, as a possible causative factor in the increase of heart disease among children.

Dr. R. H. Babcock: I think we owe Dr. Darlington a great debt of gratitude for his painstaking efforts in collecting and tabulating his statistics. It is only deplorable that the results of his investigation could not lead to some definite facts concerning the causes of cardiac disease. That there is an increase in cardiac disease, I think we all recognize, and to my mind particularly of myocardial disease. Why this is, or rather the causes thereof, are very complex, and for that reason difficult to state. I was particularly impressed with two or three points in the paper. First, that he could gather no facts concerning the relationship between infectious disease as exemplified by influenza and cardiac disease. This, perhaps, is not strange, for the reason that if a patient dies from the effect of influenza on the heart the disease is classified as influenza, and not cardiac disease. Again it is well known that the disastrous effects of influenza upon the heart muscle may first manifest themselves years later. At the time there was an acute myocarditis, perchance, and yet it was the starting point of a chronic myocarditis. If we inquire into the history of patients presenting arteriosclerosis we are struck by the frequency with which they give the history of some previous infection.

Another point which impressed me, and which surprises me greatly, was the fact that there was such an increase of heart and kidney diseases among the rural population. I had thought it was the strenuous city life which accounted for the great increase in cities, and that we should expect in the country much less cardiac disease. In talking with the essayist earlier in the day upon this point he expressed what seems to me to be true, that even in the rural population there is a strenuosity of life from the conditions of outdoor work which we have failed to recognize. I am inclined to sum the whole thing up under the term, the great strenuosity of modern life, the tremendous rush and hustle that men are engaged in, this combined with our luxurious mode of living as shown in many ways. I believe in this connection we must consider the great excess of proteins in our diet, since there is no nation in the world, probably, except Great Britain, which consumes such a large amount of meat out of proportion to other diet as do the people of the United States.

The close connection between kidney and heart disease is yet, perhaps, hardly strange when we now recognize that chronic Bright's disease is not a disease of the kidneys *per se* — it is a disease of the entire cardiovascular system, and in one case the kidney is that organ which shows the chief effects of the degenerative process, and in the other it is the heart. These various facts, together with the improved methods of diagnosis, must account for the great increase in heart disease, and make it plain that we cannot fix upon any special or definite causes. It is the whole complexness of modern conditions which accounts for it.

Dr. William M. Gibson: Dr. Darlington has certainly taken a great deal of pains to verify his statistics. In glancing over the statistics from the various boards of health, I think we can be assured that infectious diseases are causing fewer deaths. There is little doubt about the conclusions which Dr. Darlington and Dr. Babcock have drawn as to the causes for this great increase of deaths from heart troubles,— that it is the strenuous life of the people of to-day. We have but lately mastered the telephone; we are now contending with the automobile and still we want to go faster. We may soon have to take to the flying machine, and then try to prolong life on sour milk.

Dr. Roland G. Curtin: I have been observing for the last eighteen years that after every epidemic of influenza, no matter how light it may be, in about six weeks afterwards there has been a goodly number of sudden deaths without apparent cause, generally coming on after slight exertion. There must have been the microbe of influenza, influencing the muscle or nerve of the heart, which causes these sudden deaths, or perhaps something influencing the nourishment of the heart muscle.

Another cause of the increased number of deaths from heart disease which may be mentioned is the late hours which results in a short amount of sleep. When I first went to Philadelphia in 1859 they had 3 theaters there. Now they have over 50, and yet the population has not increased more than fourfold. This shows how the people are more generally supporting the drama. They go to the theaters; then follows a midnight supper; and as a result they do not get to their beds until early morning. Some of them keep this up night after night, and it all has its effect upon the strength, and incidentally the heart, especially upon the daily toilers who become overwearied.

I feel that the rapid trains, automobiles and bicycles are a disadvantage in adding to the strain upon the heart. Again, roller skating, which comes and goes as a fad; athletics in the young, as well as early dancing, are often the beginning of trouble. Keeping on with the social procession; rapid eating as well as overeating, and too much rich food, with too free use of alcohol; the haste to be rich; cigarette smoking are among the causes of cardiac disease.

Dr. Morris Manges: It strikes me that concerning these tables there must be one common factor between the increase of heart diseases and increase of kidney disease; at the same time the general mortality rate is going down. We must attribute it to some cause. Now there is one common cause in both, — the general increase of arteriosclerosis. I believe if, in further investigation, Dr. Darlington would take up the broad question of the general increase of arteriosclerosis, that might clear up this discrepancy. I think that is the controlling cause in this increased death-rate from heart trouble.

Dr. Carroll E. Edson, Denver: The factor of general vascular strain is one we ought to consider. I think we do not all realize how early this begins. The question of trouble in the heart does not begin, so far as successful treatment is concerned, when the degenerative change starts in the vascular wall. It is the preceding period of physiologic hypertension which is important to recognize, that condition of strain which is brought about, in part, by our manner of life and coming, not only in middle life, but beginning far back, in early manhood and womanhood, even in childhood, as we now see in the way that our youths and children live. There is a constant whirl of fraternities and societies, even with the young people. They have college and high school fraternities, and probably next they will have kindergarten fraternities. It is within a year that there came to my knowledge a lunch party given for boys and girls from twelve to fourteen years of age, and they began with small cocktails and then their childish appetites were stimulated with caviar. When children of ten or twelve begin life in this way, there is no wonder that the figures in the increase of heart diseases show such alarming proportions.

Dr. J. N. Hall, of Denver, Colo., read a paper on

CARDIAC DANGERS IN HIGH ALTITUDES.

These are found in connection with myocarditis, arteriosclerosis and dilatation of the heart. There are at least three contributing factors; those coming to the mountains are frequently professional men and others equally " out of training," who still wish to climb a mountain on the day of their arrival; the bracing air gives them a sensation of increased physical and mental vigor so that they feel like undertaking a big feat and are led into undertaking too much; lastly, climatic conditions, being new and strange, are sometimes the cause of overexposure or overexertion. Several cases were cited. A man of sixty-seven years walked three miles on a fine day and failed to meet his friend with whom he expected to drive back; a heavy head wind meanwhile rose, and, in trying to walk against it, his heart gave out; he fell to the ground, became chilled, contracted pneumonia and now lies at the point of death. Many a patient walks in the foothills or mountains until beginning fatigue warns him to return. Before reaching home he is utterly exhausted; and the physician finds him with a widely dilated heart and a mitral leakage. The death of Dr. Nicholas Senn was attributed to just such an overstrain in the high altitudes of the mountains of La Paz in South America. The unseasonable and unexpected fall of snow has occasionally demanded more effort than anticipated in getting back to camp or hotel, with resulting overstrain of the heart. Railway travelers at high elevations have died and one conductor on the Union Pacific Railway reported to the author eight deaths among travelers as they neared the high point in the route.

Patients with extreme mitral stenosis whose hearts are suddenly called upon for greatly increased work are in grave danger anywhere, but especially so at the higher altitudes. Very moderate exertion in one young man whose mitral orifice was extremely narrowed, as was learned *post-mortem*, brought on pulmonary edema with expectoration of enormous quantities of pink serum, and death in three hours. A similar case with presystolic murmur and thrill was saved by prompt and copious venesection.

Patients with hearts greatly exhausted by chronic disease, as in phthisis, pernicious anemia and similar troubles, are occasionally seriously embarrassed by the increased demands of the altitude even though no physical exertion be made. In fairly compensated valvular lesions the author has seen death follow a sudden break in the compensation from a single severe overexertion. Dr. Hall believes, however, that the average case of well-compensated valvular disease does as well in Colorado as anywhere else.

Dr. Roland G. Curtin, of Philadelphia, read a paper on

THE HEART AND ITS DANGER IN THE TREATMENT OF OBESITY.

Dr. Curtin spoke of the bad effects of apartment-house life in promoting indolence and overeating, with a consequent gain in weight among women. Not long ago he was called in quick succession by three physicians in consultation in as many cases of women of advanced years who were in the last extremity of heart-weakness as shown by dropsy, orthopnea, etc. They all promptly died. They had been reducing their weight by antifat medicines and a very restricted diet. Their ages were forty-eight, fifty-three and sixty-two years. One used phytolacca together with a very close diet. Another used phytolacca in combination with a restricted diet and some other unknown proprietary medicine; and the third used a proprietary remedy which was not known to any one, probably phytolacca. Shortly afterward 2 more cases with the same history came under observation, with symptoms such as great weakness, especially of the heart. Dr. Curtin cited also 7 other cases. One, a lady of thirty-five years, weighed 210 lb. She took saline laxatives and 5 gr. thyroid extract tablets to cause a reduction. She rapidly lost 26 lb.; her health began to give way and she became very weak. Her breath became short, she could not sleep and became asthmatic at night (probably cardiac). Her heart palpitated annoyingly. The treatment was stopped and she speedily lost all the foregoing symptoms. In hereditary fatness interference is dangerous. Dr. Curtin took up treatment by diet, exercise, saline treatment, thyroid extract and antifat remedies.

The extreme and rapid starvation of the heart muscle is positively dangerous to life in those with organic heart disease or those who are weak or well advanced in years. Starvation may suspend the appetite and later cause nausea and lead to local adynamia of the heart from the loss of tone of the muscular fiber. There are worse conditions than superfluous flesh.

DISCUSSION.

Dr. R. H. Babcock, Chicago: It seems to me that Dr. Curtin's warning against the attempt to reduce obesity quickly is a very timely one. I can recall more than one instance in which the appearance of cardiac incompetency followed very promptly an antifat cure. It is particularly true in people of middle age. In persons younger, say under forty, reduction cures are safer and yet not wholly without danger. But in persons who have passed forty any attempt to effect weight reduction by starvation diet and by vigorous exercise is certainly injurious for the reason that in such persons the cardiac system has suffered more or less degeneration.

Dr. Delancey Rochester: Dr. Curtin has spoken of the use of thyroid in overcoming obesity. In my judgment, it is a very deleterious drug to use for any length of time for any case, and it has a decidedly bad effect on the heart. It often produces many of the symptoms of exophthalmic goiter.

Dr. Curtin closes: I have already stated that I had never seen any serious results from using thyroid extract, and I have used it in a large number of cases. I never give large doses and I only give it in a case where the obesity is marked, and afterward carefully observe the patient. I do not have the reduction come too rapidly.

We must remember that there is a difference in people. Some are able to stand much larger doses than others; therefore it is a good thing to be cautious early than late.

(To be continued.)

Book Reviews.

A Manual of the Diseases of Infants and Children. By John Ruhräh, M.D., Clinical Professor of Diseases of Children in the College of Physicians and Surgeons, Baltimore. Second edition, thoroughly revised. Philadelphia and London: W. B. Saunders Company. 1908.

A perusal of this work shows nothing to cause us to modify our opinion as expressed in our review of the first edition, which was as follows:

"Feeling as we do that there is no justification for manuals of the class which this represents, we cannot, of course, recommend it. It is, however, far better and more comprehensive than most similar works and is very well up-to-date. It is, of course, necessarily incomplete and often fails to give a proper picture of the disease in question. The illustrations are good and well selected. The references to pediatric literature are an unusual and valuable feature."

Elements of Water Bacteriology. By Samuel Cate Prescott, Assistant Professor of Industrial Biology, and Charles-Edward Amory Winslow, Assistant Professor in Sanitary Biology in the Massachusetts Institute of Technology. Second edition, rewritten. Pp. 258. New York: John Wiley & Sons; London: Chapman & Hall, Ltd. 1908.

Since the appearance, four years ago, of the first edition of this excellent book, such progress has been made in the bacteriology of water supplies as to necessitate a very thorough revision, with substantial additions to several of the chapters and a complete new chapter dealing with the bacteriology of sewage and sewage effluents. The extent to which the literature of the subject has been utilized may be judged by the fact that the references thereto cover no fewer than twenty-nine pages.

Progressive Medicine. Edited by Hobart Amory Hare, M.D., assisted by H. R. M. Landis, M.D. Philadelphia and New York: Lea & Febiger. March 1, 1908.

This excellent periodical publication has reached its tenth volume. The first part of this last volume reports the recent literature of surgery of the head, neck and thorax; infectious diseases, diseases of children, rhinology, laryngology and otology. The summaries of papers are carefully and judicially made and the publication remains, as it has been from the first, an extremely valuable epitome of medical progress. With the rapid growth of medical literature it becomes increasingly necessary that knowledge should be epitomized, and we know of no better summary than this which has now passed through a decade.

Hypnotic Therapeutics in Theory and Practice, with Numerous Illustrations of Treatment by Suggestion. By JOHN DUNCAN QUACKENBOS, A.M., M.D. 8vo, pp. viii, 336. New York and London: Harper & Brothers. 1908.

"'There's no use trying,' said Alice, 'one can't believe impossible things.' 'I daresay you haven't had much practice,' said the queen. 'When I was your age, I always did it for half an hour a day. Why, sometimes I've believed as many as six impossible things before breakfast.'" Unfortunately, the White Queen has given us no further information as to the methods employed to develop this faculty of credulity. It is a pity; it might have helped us to believe in the hypnotic miracles described in this book.

Surgery. By JOHN ALLAN WYETH, M.D., LL.D. (University of Alabama), President of the New York Academy of Medicine; President of the Medical Faculty of, and Surgeon-in-Chief to, the New York Polyclinic Medical School and Hospital; Ex-President of the American Medical Association, of the New York State Medical Association and of the New York Pathological Society; formerly Attending Surgeon to Mt. Sinai and to St. Elizabeth's Hospitals; Honorary Member of the Texas State Medical Association and of the Medical Society of New Jersey, etc. With 864 illustrations. New York: Marion Sims Wyeth & Co. 1908.

This reviewer finds himself somewhat at a loss as to how he shall enter upon the task before him. The book appears in reality to be the fourth edition of Wyeth's "Textbook on Surgery," which was first published in 1887.

The present title is an ambitious title, and a somewhat ambiguous title. Can it be that the author proposes, in 790 pages, to sum up and to cover the great subject of Surgery? We take it rather that he proposes to give us a book which shall be mainly a discussion of the treatment of surgical diseases, for certainly the text develops but a meager discussion of the natural history of such diseases.

We have looked through this book with care, with admiration and with appreciation. It is obviously the production of a veteran, whose communications are always interesting, though they are often superficial. In reading this book one frequently feels that he is not getting the well-digested and bottom facts of modern surgery, but that he is listening to the pregnant talk of a clever, experienced but somewhat desultory thinker.

The author covers by title, however, most of the subjects of modern surgery. About every subject that he covers he has something to say. Sometimes he is illuminating, sometimes he is brusque, frequently he is entertaining, especially when he deals with topics in which he himself is peculiarly interested, — amputations, appendicitis, lesions of the stomach and intestines, and the like.

In many of its features the work reminds one feebly of Thomas Bryant's splendid old textbook on the Practice of Surgery, which was popular twenty years or more ago.

The student and general practitioner should find "Surgery" useful, however. In spite of its faults, it abounds in shrewd hints and unexpected bits of information. It is devoid of perspective, yet its high lights are good, and though its illustrations mostly are archaic, they are instructive, while it is evident that the volume, solidly though economically produced, is intended for widespread, popular distribution.

Religion and Medicine. The Moral Control of Nervous Disorders. By ELWOOD WORCESTER, D.D., Ph.D.; SAMUEL MCCOMB, M.A., D.D., and ISADOR H. CORIAT, M.D. 12mo, pp. viii, 427. With 8 illustrations. New York: Moffat, Yard & Co. 1908.

This is the official book of the so-called Emmanuel Church movement against "functional" nervous disorders, a movement ostensibly undertaken "because this branch of medicine is least developed in America" and "because disorders of this nature are peculiarly associated with the moral life." The chapters on these "functional" neuroses and their causes, however, do not give us the impression that the clerical authors have attained any higher degree of development in the knowledge of this branch of medicine than the average American neurologist. They regard all the "functional" neuroses as "diseases of the subconscious mind," and under this head they include neurasthenia, hysteria, psychasthenia, melancholia, chorea, hypochondria and mania. Nothing is said of other affections ordinarily regarded as "functional," such as epilepsy, migraine and paralysis agitans, or whether they are also diseases of the subconscious mind. The doctrine of the "subconscious mind" is somewhat curious. It plays "an important part in religion, in memory and in the higher creations of thought. It is doubtless more generic and in closer contact with the Universal Spirit than reason, yet its creations bear the imprint of individual genius." Even the *vis medicatrix naturae* is due to its action. Presumably the clerical authors mean by the "subconscious mind" all the functions of the nervous system that are not actively present in consciousness, in which case some of their claims might be allowed, but such a definition of the "subconscious mind" is rather more vague and broad than is ordinarily accepted in scientific psychology. The chapters on etiology rehearse the old commonplaces about the terrible increase in insanity and nervous diseases, the extreme importance of heredity and the baneful influence of conditions of modern life, with such Hearstian touches as that the elevated railways "injure the eyes of thousands by the tiny filaments of steel which the brakes constantly shave from the wheels." They have made a considerable study of psychology and works on hypnotism and psychotherapy, but, with it all, they show a lack of true knowledge of the nervous system and its diseases, and especially a marked failure of critical judgment in their estimate of medical literature. They show a tendency to accept the authority of inferior, untrustworthy and third-rate writers, and to slight the opinions of those of greater authority and sound judgment, especially those who do not accept the extreme views upon the value of hypnotism, abnormal psychology and psychotherapy which they entertain. We are reminded of the Professor's breakfast-table comments on "cases where ministers had meddled with medicine, sometimes well and sometimes ill, but, as a general rule, with a tremendous lurch to quackery, owing to their very loose way of admitting evidence." Even Dr. Coriat has followed the lead of his theological coadjutors in putting "functional neuroses" into a class by themselves, distinct from organic nervous diseases, not conditioned by the same laws, and purely psychical in origin. It is needless to point out the many errors in this doctrine, or to argue that the distinction between "functional" and "organic" is purely arbitrary and is based solely upon the limitations of pathology; that "functional" diseases are governed by the same general physiological and pathological conditions of the nervous system, and that even neurasthenia and psychasthenia may not be of psychical origin at all, but the result of fatigue or toxic processes. When we consider the repeated revivals of hypnotism in the last century and its repeated failures to win an established place in the confidence of the best neurologists as a trustworthy and valuable therapeutic measure, it is somewhat extreme to regard it as "one of the triumphs of modern science." That psychotherapy in the wider sense is a valuable therapeutic aid, too often neglected or improperly applied, is an accepted fact, but it is not a panacea even for the "functional" neuroses. Faith and prayer, too, may be useful adjuvants in the treatment of many forms of disease. The concluding chapters of the book deal with these topics, but apparently with a lurking faith in demoniacal possession and the patristic miracles which inspires distrust. That various religious movements have had a beneficial effect upon certain nervous disorders is an admitted fact, but, in spite of the benefits in individual cases, that such emotional outbursts are, on the whole, detrimental, is equally true. If the Emmanuel Church movement in its practical workings shows the same lack of true knowledge of nervous disease and of the true critical scientific spirit as is shown by its official book, the ultimate effect will prove harmful and the book itself justifies the steadily increasing distrust which the ablest neurologists in this country express in regard to the whole movement.

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RELATIONS BETWEEN PHYSICIANS.

In this issue of the Journal we publish two papers which should be of wide interest to the profession at large. We refer to Dr. Gilman Osgood's communication, read before The Massachusetts Medical Society, on "The Country Doctor's Relations with the Metropolitan Institutions and Specialists," and to Dr. Maurice H. Richardson's remarks thereon. It is evident that these gentlemen have discussed frankly certain matters of vital importance to the entire profession. It is increasingly apparent, with the growth of large municipal hospitals and the development of special branches of medical practice, that the relations between metropolitan physicians and those who practise in the smaller towns is becoming more and more intimate and, therefore, more and more open to possible misunderstanding. Dr. Osgood presents his side of the question in a manner which must appeal to many in the community. It is altogether natural that the mistakes which he portrays should be made, and it is all the more desirable that such mistakes should be minimized and that the relations between consultants, general practitioners and institutions should be established on the firmest possible basis of sympathy and good feeling. It is not difficult to appreciate the discouragement which must continually meet the country doctor in his efforts to benefit his patients through consultation or other assistance which the large medical centers are supposed to afford, but the more frequently such difficulties arise the more essential does it become that an understanding be reached at the earliest possible moment.

That the misunderstandings which Dr. Osgood narrates are by no means a novelty within the ranks of the profession is admirably illustrated by the unseemly controversy which took place nearly a hundred years ago between the surgeons and others in London, a controversy which, in fact, led to the foundation of the *Lancet*. Dr. Richardson, in his remarks on Dr. Osgood's paper, calls attention to an editorial published in the first volume of this Journal, on the 29th of July, 1828, and suggests that it would be well to republish it entire. This is unfortunately precluded by its length, and we, therefore, content ourselves with a reprinting of several of its concluding paragraphs. The entire communication is well worth reading at the end of these eighty years, and should at least lead to a sense of satisfaction that much of the hard feeling and bitterness of expression which then existed is no longer possible. It is almost incredible to us of this later generation to realize that men of supposed liberal education could employ such extraordinary personalities in dealing with any question whatever. No doubt the charity of which Dr. Richardson speaks has developed greatly since those early days of surgery. In dealing with so uncertain a science and art as that of medicine it should be apparent to every liberal-minded man that mistakes are inevitable and that it is only by fellow-feeling and generosity of judgment, as he points out, that peace and harmony can ultimately prevail. On this subject the editorial writer in this Journal eighty years ago, among other things, says:

> " It has always been cast as a reproach upon the medical profession that the members of it are exceedingly prone to jealousies, heartburnings, slander and even downright quarreling. It would not be difficult to show that there is something in the nature of the intercourse of physicians with their patients and with one another, in the nature of the rivalry which exists between them, the collisions to which they are exposed, and still more in the character and mode of judging of them among mankind, with whom physicians are chiefly concerned, which might be reasonably expected to tend to this result. We do not mention this as a palliation but as an inducement to watchfulness. It is no less a moral than a professional duty for every individual in the profession to divest himself of such feelings. There are, and from the inevitable propensities of human nature must be, men who have no notion whatever of an honorable and generous competition; with whom every competitor is a rival and every rival an enemy; who can never bear to see the success of a brother, even though it detract nothing from his own; and who feels every atom of credit or reputation obtained by another to be so much taken away from himself. In cities we are less exposed to the temptations to this state of feeling, but in smaller communities how often is it the case that rival physicians entertain unfriendly views and either directly or indirectly endeavor to turn the occurrences of practice against each other. How seldom is it, we may safely say, that physicians, under these circumstances, ever speak of each other with perfect freedom from prejudice!
>
> " Yet we believe, not only as a matter of duty, but *even of policy*, that it is wise to cultivate kind and friendly feelings towards those who come most directly across our paths, and also to speak of them in the most favorable terms that strict regard to truth will allow; never to take advantage of those accidents and adverse occurrences which happen in practice to the most accomplished and successful men; to create prejudice against each other, but, on the contrary, distinctly to impress the opinion that from the nature of the art such occurrences are inevitable. We believe that those who candidly and honestly pursue this course will find their account in it. It will produce not only more kindly feelings toward them, and a greater confidence in them among their professional brethren, but a more desirable and permanent reputation in the public at large, and afford them a degree of happiness which success with an opposite temper could not give.
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> " We sincerely believe that no such spirit now exists in this country as is evinced in the publications we have been speaking of [referring to *Lancet* controversy]. But it by no means follows that such a state of things may not arise, and it becomes those who are looked up to on account of their age or eminence, and who have a proper regard to the honor of their profession, to set an example of candor, moderation and liberality which cannot fail to have the most salutary effects."

SMOKE NUISANCE.

The abatement of the smoke nuisance in great cities is attended with difficulties which are probably not generally appreciated. The viewpoint of the consumers of coal, the kind of coal and the locality in which any given sort of coal is used, all have their bearings upon this really perplexing question. Mr. George H. Cushmen, in his article on *A Practical Campaign for Smoke Prevention*[1], offers some cogent observations. There are all kinds of coal, from anthracite (from which comparatively little smoke arises), through bituminous coal (which gives out more), to lignite, which emits a very dense smoke indeed. The use of a particular sort is largely governed, so Mr. Cushman believes, by the ineradicable custom of the given locality, but principally by the supply of the coal and its cost. Anthracite is found mostly in the Eastern states, where it is to be had at least cost; this is one reason why in our seaboard cities the health authorities have been more successful in the suppression of the smoke nuisance. On the other hand, in such cities as Pittsburg, Cleveland, Cincinnati and Chicago, the cost of anthracite, so the manufacturers declare, would be prohibitive; nor in any event is there enough in existence. Thus here the bituminous and lignite varieties are almost exclusively used. And manifestly, all the greater are the difficulties confronting the health authorities of our more western cities.

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[1] Review of Reviews, July, 1908.

Mr. Cushman assumes, somewhat gratuitously, no doubt, that manufacturers have uppermost in their minds, not the public nor the public health, but the means by which they can get the greatest amount of heat for their business purposes at the least possible expense; that many among them have found it far cheaper to pay the occasional fine than to put in an automatic stoker, or to make changes in the fireroom equipment. He observes also that most factories and like buildings were constructed before scientific principles governing smoke prevention were evolved. These buildings have cost enormously, and proportionately costly would be the changes to this end called for by health authorities. From this viewpoint he argues very well, so far as we can judge, for his presentation is a technical one, that in most factories coal is nowadays burned in such manner that from 25 to 60% of its value, $1 to $3 a ton, is wasted. We shall not here follow him further than to state his distinction (upon which an anti-smoke campaign should be based), between smoke prevention and smoke consumption. In the first place, gases are burned in the fire box before they form smoke, and this process should be turned to account in reducing very materially the fuel bill. Most devices have thus far been designed to meet the latter end,—to catch and burn the smoke in the stack. The example of the Edison Company in Chicago is cited, whose engineers have considered the subject very deeply. This company seems to have solved the problem with economy for itself and with entire satisfaction, it would appear, to its community. It burns 2,000 tons of coal in a day, and "there is never seen at any time the slightest bit of smoke coming from any one of the stacks of the central power house."

Mr. Cushman observes that measures for smoke abatement have thus far been mainly legislative rather than educational. He would have municipalities engage experts, who would demonstrate to factory owners that smoke prevention would pay as a business investment. It would obviously be absurd and grotesque to go with him the full length to which his logic would point. After all, it is not the business of any city to teach manufacturers how best to conduct their own affairs, nor have health authorities any other concern than the enforcement of their sanitary codes. Nevertheless it is certainly appropriate for the authorities to recognize such difficulties as are here indicated, and this has been done. In Boston, for example, a smoke-abating law went into effect in December, 1905, and copies of it were distributed among those who were likely to perpetrate an excessive amount of smoke, with the notice that the Board of Health would begin its enforcement on Jan. 1, 1906. Competent inspectors then made note of the exact time and extent of any violation of the smoke law; identified the chimney from which the smoke issued; did not, where it could be avoided, enter the building, and "neglected all talk about particular smoke-consuming devices." One hundred and seventy-four places were reported in the first month, notices were sent in all these cases, and responses were made from the several hotels, stores, factories, office buildings, schools, colleges and industries involved. Conferences between the Health Board and their representatives resulted most satisfactorily, with a full understanding of the import of the law, the prospect of its being enforced and a mutual desire to see the smoke nuisance abated. Requests were made under the permit clause of the law for time in which to make necessary constructional alterations. The board did not in any instance recommend any special device or kind of coal as a remedy; it emphasized, however, the importance of sufficient boiler capacity and intelligent stoking as the primal means, not only for reducing the amount of smoke to the legal limit, but for reducing the fuel expense and the demand for special additional apparatus. It was found necessary to prosecute but one case, which was filed on the plea of guilty, with the assurance that the infraction would not be repeated.[2]

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MEDICAL NOTES.

A Centenarian. — The death of Rev. Thomas Lord, at the reputed age of one hundred years, and said to be the oldest preacher in England, is announced. Since the year 1834 he has preached in the Congregational church, and during that period has delivered upwards of nine thousand sermons. He continued his vocation up to within a few days of his death.

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[2] Report of the Massachusetts State Board of Health, 1906.

Care of a Leper. — John R. Early, formerly a United States soldier, now in Washington, who is supposed to have contracted leprosy during his service in the Philippines, is probably to be cared for by the United States War Department. Two other soldiers who have contracted leprosy while in the service of the government are already being cared for. Early presumably will be obliged to remain in the District of Columbia on account of the difficulty of procuring passage for him either by rail or steamship. It is expected that he will receive a total disability pension and possibly other emolument, provided, as is probable, it can be proved that the disease was contracted while in the service.

International Opium Commission. — The Commission of the United States to the Intertional Opium Commission of Shanghai, consisting of Rt. Rev. Charles H. Brent, Dr. Hamilton Wright and Dr. Charles D. Tenney, is attempting to find out the facts as to the licit and illicit use of opium and its derivatives in this country. This commission was negotiated for by Secretary Root, and Great Britain, France, Germany, Holland, Portugal, China and Japan, besides this country, are sending commissioners to Shanghai with data on the opium question as it affects each nation individually and their possessions in the Far East. The commission is anxious to go to Shanghai thoroughly informed in regard to the question as it affects the United States itself, and is finding it rather difficult to get accurate data as to how much of our opium is used illicitly in this country. Our imports of crude opium are extremely large, and our imports of chandoo or smoking opium have jumped from 54,000 pounds in 1878 to 151,000 pounds in 1907. Information regarding the following questions is desired:

1. Is it necessary that we should import so great a quantity of opium for medical purposes?

2. What proportion of the various professions, criminal classes, prostitutes and their hangers-on use opium or its derivatives illicitly?

3. What proportion of what we regard as our normal classes are addicted to some form of the opium habit?

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Sept. 1, 1908, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 43, scarlatina 32, typhoid fever 30, measles 14, smallpox 0, tuberculosis 45; cerebrospinal meningitis 0.

The death-rate of the reported deaths for the week ending Sept. 1, 1908, was 19.97.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Aug. 28, 1908, was 228, against 231 the corresponding week of last year, showing a decrease of 3 deaths and making the death-rate for the week 19.22. Of this number 98 were males and 130 were females; 220 were white and 8 colored; 161 were born in the United States, 63 in foreign countries and 4 unknown; 49 were of American parentage, 162 of foreign parentage and 17 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 45 cases and 2 deaths; scarlatina, 20 cases and 0 deaths; typhoid fever, 37 cases and 1 death; measles, 17 cases and 0 deaths; tuberculosis, 45 cases and 18 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 17, whooping cough 2, heart disease 15, bronchitis 0 and marasmus 17. There were 13 deaths from violent causes. The number of children who died under one year was 94; the number under five years 105. The number of persons who died over sixty years of age was 43. The deaths in public institutions were 81.

Cerebrospinal meningitis, 2 cases reported.

NEW YORK.

Tuberculosis Pavilion. — The tuberculosis pavilion erected at Albany by the Central Federation of Labor was dedicated on Aug. 29. Governor Hughes and John Mitchell were the principal speakers at the ceremonies, and there was a parade of the labor unions of Albany, Troy and other neighboring cities. The building is the first of its kind to be erected in this country by the labor federation, and the undertaking has been aided in part by the Albany Tuberculosis Committee.

Exercises Commemorative of Founding of New Rochelle. — Dr. Darlington, president of the New York City Health Department, was the principal speaker at the exercises, on Aug. 24, commemorating the two hundred and twentieth anniversary of the founding of New Rochelle, Westchester County, by a colony of Huguenots. These included the dedication of a large bronze tablet containing the names of one hundred and thirty settlers, decorating a granite memorial on Bonnefoi Point overlooking Long Island, the original landing place of the Huguenots.

Meeting of Negro Physicians. — The National Medical Association, representing negro physicians in twenty-nine states, and also including some dentists and pharmacists, held its annual meeting in New York on Aug. 25, 26 and 27. An address of welcome was made by Acting Mayor McGowan, and the presidential address by Dr. W. H. Wright, of Baltimore. A notable address was also made by Dr. Robert Reyburn, of Washington, D. C., ex-president of the American Therapeutic Society and dean of the medical department of Howard Univeristy.

A Centenarian Automobile Club. — It is probable that no other institution of the kind in the country can present such a showing as that of the Daughters of Jacob Home for Aged Men and Women on East Broadway in its recently organized "Century Automobile Club." It appears that it has been the custom at this home to give as many of the inmates as possible an automobile outing once a year, but some fifty have been left at home. Feeling that they should have precedence over the "youngsters," the oldest of them have banded together in order that they may demand, on account of their seniority, the first chance at the privilege. The requirement for admission to the organization was the age of one hundred years or over, and it was found that there were nine of the inmates who were entitled to membership. The aggregate age of the nine is no less than nine hundred and thirty-seven years. The oldest of the number is Esther Davis, said to be one hundred and fourteen, and the oldest woman in any New York Home, and the next oldest, one hundred and seven, while only one is as young as one hundred. This step on the part of the centenarians, however, has been a benefit to the other inmates as, in order to restore peace, the superintendent has agreed to take the entire number in the institution on the excursion this year.

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Current Literature.

British Medical Journal.

June 6, 1908.

1. *Saundby, R. (Prof.) *Address on Cerebral Influenza.*
2. Williamson, R. T. *Clinical Lecture on Hemiplegia with Unilateral Optic Atrophy.*
3. Schäfer, E. A. (Prof.) *Oliver-Sharpey Lectures on the Present Condition of Our Knowledge Regarding the Functions of the Suprarenal Capsules.*
4. Parker, R. *An Unusual Case of Appendicitis.*
5. Cousins, J. W. *Case of Compound Follicular Odontoma.*
6. Paul, F. T. *Three Years' Experience of Butlin's Operation for Cancer of the Tongue.*
7. *Fells, A. *Remarks on Cancer of the Mouth in Southern India, with an Analysis of 209 Operations.*
8. Jones, R. *On the Treatment of Fracture of the Femur in the Newly Born.*
9. Whiteford, C. H. *Plastic Resection of the Breast and its Bearing on the Preliminary Incision of Breast Tumors.*

1. Saundby gives an interesting paper on cerebral influenza, the first part of which he devotes to a history of this condition and previously recorded cases and work done on the subject. In Germany it was known, from its sudden onset, severe symptoms and high mortality, under the name of "sleeping sickness." The post-mortem appearances consist of intense congestion of the membranes with minute hemorrhages, although the condition may go on farther to a typical purulent meningitis. The permanent symptoms are intense headache, vomiting, paralysis of various organs, delirium developing into a stupor or unconsciousness. Prognosis is usually very bad; treatment is of little or no avail.

7. Fells, in some remarks on cancer of the mouth, with an analysis of 209 operations, states his belief that calcium chloride given for two or three days previous to the operation is of distinct value. He encourages patients to take water by mouth from the evening of the day of operation and liquid nourishment next morning. In none of his cases was there any subsequent lung complication or any serious septic trouble. There was a mortality of six in the whole series of 209 operations. [J. B. H.]

June 13, 1908.

1. Drummond, D. *Thoracic Aneurysm.*
2. Carl, S. W. *Primary Sarcoma of the Lung.*
3. Keith, J. R. *Myalgia.*
4. Waring, A. *The Dangers and Evil Effects of Infant Binders.*
5. Mackenzie, T. *The Ink Polygraph.*
6. Fox, J. T. *A Plea for the Habitual Performance of Autopsies in General Practice.*
7. Battle, W. H. *Traumatic Rupture of the Large Intestine. Operation. Recovery.*
8. Manwaring-White, R. *Perforated Gastric Ulcer. Operation. Recovery.*
9. Gray, H. T. *The Treatment of Fractures. The Science Committee of the British Medical Association.*
10. *Kilvington, B. *An Investigation on the Regeneration of Nerves with Regard to Surgical Treatment of Certain Paralyses.*
11. *Biggs, L. N. H. *Investigation of the Bundle of His in Rabbits' Excised Hearts Perfused with Locke's Fluid.*
12. Marsh, F. *An Address on the Present Position of the Association: the Need of Further Local Organization.*

10. Kilvington reviews the work already reported on nerve bridging and nerve transplantation and then describes his own experiments. He did nerve-bridging in seven animals over a gap of $\frac{3}{4}$ inch to 2 inches. In five out of these seven the response to electric stimulation was perfect. Of all methods described, nerve auto-transplantation is, in his opinion, by far the best. In surgery on human subjects the all-important fact is that operation should be done as soon as possible. If there is any scar tissue it it should be entirely removed.

11. Biggs describes some interesting experiments on the bundle of His in rabbits' hearts. His results do not agree with those of Hering and Erlanger. [J. B. H.]

June 20, 1908.

(*Special Hospital Number.*)

1. *Bowlby, A. A. *Nine Hundred Cases of Tuberculous Disease of the Hip, Treated at the Alexandra Hospital, with a Mortality of Less than 4%.*
2 Osler, W. *Remarks on the Functions of an Out-Patient Department.*
3. Shaw, L. E. *The Future of the Voluntary Hospital and its Relation to a Reformed Poor Law Medical Service.*
4. Beale, E. C. *General Hospitals and the Provident System.*
5. Rankin, Z. *Home Hospitals for the Middle Classes.*

6. Adams, H. P. *Notes on the Construction of Cottage Hospitals.*
7. Hamilton, G. G. *A Note on Separate Operating Rooms and their Management.*
8. Tobin, R. F. *The Promotion of Uniformity in the Registration of Diseases in Hospitals.*
9. Turnér, J. G. *The Dental Needs of the Poor of London.*

1. Bowlby, in his remarks on the treatment of tuberculosis of the hip, emphasizes the fact that the patient as well as the hip must be treated and also that the strictest antiseptic precautions should be used in operation. He describes the operation he uses. He makes a strong plea for a sanatorium for tuberculous children as well as for adults. He gives the early statistics of this hospital, describes the institution and its convalescent provisions and considers the treatment, local and general. He is strongly against the operation of excision and believes it never to be necessary. [J. B. H.]

June 27, 1908.

1. Lister (Lord). *Remarks on Some Points in the History of Antiseptic Surgery.*
2. *Doran, A. H. G. *Cystic Tumor of the Suprarenal Body Successfully Removed by Operation, with Notes on Cases Previously Published.*
3. Harrison, E. *Two Cases of Lateral Sinus Thrombosis.*
4. Kesteven, L. *The Etiology and Treatment of Eczema.*
5. Mummery, N. H. *Diving and Caisson Disease. A Summary of Recent Investigations.*
6. Grant, C. G. *A Few Cases of Compressed-Air Illness, with Remarks.*
7. Rhodes, J. M. *The Mentally Defective in Prison.*

2. Doran reports a case of cystic tumor of the suprarenal body successfully removed by operation, in which he gives detailed description of the operation and the microscopic appearance of the tumor. He then describes thirteen similar cases which have been reported in the literature. In regard to symptoms, pain appears to be the rule. Bronzing of the skin, which occurs in Addison's disease, occasionally appears. He gives some details in regard to the surgical treatment of this condition. [J. B. H.]

July 4, 1908.

1. *Bennett, W. (Sir). *Post-Graduate Lecture on Some Clinical Aspects of Pain, Especially in Reference to its Spontaneous Disappearance.*
2. Raymond, F. *Address on the So-Called Family Diseases; Premature Physiological Senescence Localized to Certain Organic Systems.*
3. Sutton, J. B. *Address on the Present Position of Abdominal Hysterectomy for Fibroids in London.*
4. *Findlay, L. *Etiology of Rickets; a Clinical and Experimental Study.*
5. Cuff, A. *Clinical Notes on Some Causes of Peritonitis occurring during the Course of Pregnancy.*
6. Cheatle, G. L. *On the Mental Nerve Area and its Relation to the Grayness of Hair.*
7. Snell, S. *Streptococcus Infection of Eyelids treated by Anti-Streptococcus Serum; Subsequent Removal of Sebaceous Cyst.*
8. Fenwick, E. H. *The Value of Bilateral Ureterostomy (Short-Circuiting of the Urine) in Advanced Cancer of the Bladder or Prostate and as an Adjunct to the Removal of the Bladder in Uncontrollable Localized Disease.*

1. Bennett, in a lecture on the clinical aspects of pain, concludes that no accurate estimate of the behavior of pain is possible in the absence of a careful study of the temperament of the patient. Sudden or rapid disappearance of pain should never be accepted without reserve on its own account as a sign of improvement. Sudden disappearance or rapid diminution of pain, unless it be coincident with proportionate improvement in the associated symptoms, is often a sign of impending disaster and not an indication of recovery.

4. In an interesting article on the etiology of rickets, Findlay goes over the various theories hitherto brought forward to explain this condition and then speaks at some length on his own theory, that food has very little to do with it, but that it is largely due to the effects of deprivation of exercise. He describes some interesting experiments on dogs, illustrated by an excellent plate going to prove his statements. He confined young dogs and deprived them of exercise, thereby invariably inducing rickets, although their diet was beyond suspicion, the air which they breathed pure and their kennels kept scrupulously clean. Control animals allowed exercise but otherwise similarly treated did not become affected. Examination of the conditions under which rachitic children are reared revealed one constant and invariable factor in their lives, namely, confinement. This, he believes, is the main factor in causing the disease. [J. B. H.]

July 11, 1908.

1. *Whitla, W. *The Etiology of Pulmonary Tuberculosis. Cavendish Lecture 1908.*
2. *Russell, W. *Remarks on Congenital Stenosis of the Pylorus in the Adult.*
3. *Maylard, A. E. *Congenital Narrowness of the Pyloric Orifice a Cause of Chronic Gastric Disease in the Adult.*
4. Moulin, C. M. *Gastro-enterostomy for Non-Malignant Disease.*
5. Gibb, J. A. *Tetany in the Adult.*
6. Mantle, R. *Mucous Colitis and its Relationship to Appendicitis and Pericolitis with Remarks upon its Treatment by Irrigation (Plombière's Bath).*

1. Whitla, in a careful and scholarly article, discusses the various theories in regard to the etiology of pulmonary tuberculosis and the relation between the human and bovine types. He describes the work of Koch and, since his epoch-making announcement in 1901, the work of Calmette, Guérin and others to disprove his view. He speaks of an interesting series of experiments carried on by Professor Symonds and himself to test Calmette's statements. He ends by accepting Calmette's conclusion that the immense majority of cases of pulmonary tuberculosis is not contracted by inhalation but through the intestinal tract.

2. Russell discusses pyloric obstruction in general and then describes cases of this condition in the adult which he believes due to congenital thickening. This he believes is a causal factor very frequently unconsidered. Diagnosis depends largely on the history of attacks of stomach trouble dating from early childhood with pyloric spasm or cramp. Treatment in the majority of cases is medical.

3. Maylard gives 19 cases of chronic gastric disease in the adult which he believes due to a congenital narrowness or thickening of the pylorus. These cases were all operated on, and nothing abnormal found save a dilated stomach and pyloric narrowing. He prefers pyloroplasty or Finney's operation. The condition occurs oftener in woman than in man, and the age at which symptoms appear depends upon the narrowness of the aperture and the constitution of the patient. [J. B. H.]

July 18, 1908.

1. Waterhouse, H. F. *Address on Professor Bier's Treatment by Means of Induced Hyperemia.*
2. Spencer, W. G. *Remarks on Nasal Obstruction.*
3. Paterson, D. R. *Treatment of Otitic Cerebellar Abscess, with Remarks upon Three Successful Cases.*
4. Science Committee of British Medical Association. Rep. CVII. Cunningham, H. H. B. *Some Complications of Chronic Otorrhea.*
5. Beaumont, W. M. *Remarks on Iritis, with Special Reference to Gonorrheal Iritis.*
6. Stephenson, S. *On a Little Known Type of Amblyopia in Children.*
7. Edwards, W. L. *Medical Inspection of Schools. Some Notes on Organization.*
8. *Gunn, J. A. *An Action of Arsenic on the Red Blood Corpuscles and a Theory of the Blood Defect in Pernicious Anemia.*

8. Gunn presents a short article on the action of arsenic on the red blood corpuscles. Various observers have come to the conclusion that because arsenic seems to have no direct effect in increasing the production of red blood corpuscles its beneficial results must come from its specific action on the parasites causing the disease for which it is given. In a series of experiments in which he has mixed

arsenic in a suspension of blood corpuscles, he shows that arsenious acid is fixed to the red blood corpuscles and that this process takes place very rapidly and furthermore that it protects these corpuscles against the hemolytic action of distilled water. He believes that in some way the arsenic affects the stroma of the red cells in the hemoglobin, but as this stroma is known to contain lecithin and cholesterin he believes that these two substances should be given a thorough trial in every case of pernicious anemia, especially as in our present knowledge of this disease no drug appears to have any permanent beneficial effect. [J. B. H.]

July 25, 1908.

1. *Tubby, A. H. *Clinical Lecture on Coxa Valga.*
2. Parker, R. *Clinical Lecture on the Removal of Lymph Glands.*
3. Paton, D. N. *On the Action of Chloroform Administered by Different Channels.*
4. Colt, G. H. *Note on the Administration of Ether by the Open Method.*
5. Pollard, B. *On Rectal Drainage in Cases of Pelvic Abscess due to Appendicitis.*

1. Tubby presents a clinical lecture illustrated with numerous diagrams and x-ray photographs on coxa valga. This is a condition of the head of the femur exactly opposite to coxa vara, in which the head of the femur is displaced upwards and the shaft abducted. As regards etiology and causation this condition may be either congenital or acquired. In the congenital cases it may occur in conjunction with congenital dislocation of the hip, or may exist by itself. Acquired cases may result from various causes: (1) Arising from traction exerted by a pendant limb; (2) static or functional varieties due to paralysis of one extremity, etc.; (3) traumatic coxa valga arising after fracture of the neck of the femur, with impaction and malunion, and after injuries and separation of the epiphysis; (4) coxa valga associated with rickets or other processes of bony softening such as osteomyelitis and tuberculosis; (5) idiopathic coxa valga. The cardinal signs are abduction of one or both lower extremities associated with external rotation and limitation of abduction. As regards treatment, the subject has received so little attention up to date that no definite rules can be stated. He gives the details of several cases which have been operated on for this condition. [J. B. H.]

The Practitioner. May, 1908.

(*Special Number: The Opsonic Method and Vaccine Therapy.*)

1. *Wright, A. E. (Sir). *On Some Points in Connection with Vaccine Therapy and Therapeutic Immunization Generally.*
2. *Fleming, A. *Some Observations on the Opsonic Index, with Special Reference to the Accuracy of the Method and to Some of the Sources of Error.*
3. *Wells, J. H. *Observations on the Opsonic Index in Infants*
4. *White, A. H. *Note on the Experimental Error in the Method of Determining the Tuberculo-Opsonic Index of the Blood.*
5. *Greenwood, M. *Statistical Considerations Relative to the Opsonic Index.*
6. *Harris, A. B. *Treatment by Bacterial Vaccines.*
7. *Inman, A. C. *The Value of the Opsonic Index in the Treatment of Pulmonary Tuberculosis.*
8. *Briscoe, J. C., and Williams, E. U. *The Treatment of Pulmonary Affections by the Inoculation of Vaccines Controlled by the Opsonic Index.*
9. *Collier, H. S. *A Surgical View of the Opsonic Method.*
10. *Whitfield, A. *On the Treatment of Skin Diseases by Inoculation after the Opsonic Method.*
11. Tod, H. F., and Western, G. T. *The Treatment of Lupus and Tuberculous Disease of the Ear, Nose and Throat by Inoculation.*
12. *Horder, T. J. *Ulcerative Endocarditis and its Treatment by Vaccine-Therapy.*
13. *Walker, J. W. T. *The Tuberculin (T. R.) Treatment of Tuberculosis of the Genito-Urinary Organs.*
14. Allen, R. W. *Opsonic Method and Vaccine Therapy in Relation to Diseases of the Eye.*

1. Wright, in a long and exhaustive article, endeavors to cover the entire field of vaccine therapy and therapeutic immunization. After discussing the general question of vaccine therapy and therapeutic immunization, he devotes a considerable part of his paper defining his position, that a careful watch of the opsonic index of the patient's blood is necessary in the vast majority of cases where vaccines are indicated. He does not believe that the clinical symptoms of the patient will furnish any accurate guide by which immunization procedures may be regulated. While there are a few cases where the process can be watched with great care, these cases are so much in the minority as to be left out of consideration. He then takes up the question as to whether the technic for the determination of the opsonic index will furnish accurate and useful information with respect to the way the patient is progressing. He believes that the great variation in results found by those investigators who have criticised his methods is on account of their own faulty technic. He takes up at length the other procedures, surgical and medical, which may be used to help the process of bacterial immunization, and the various conditions as regards sinuses, suppurating wounds, etc., which make necessary certain changes in the routine procedure. He considers the Bier treatment by congestion, measures for diminishing the coagulability and viscidity of the blood, measures to open the way for the entrance of antibacterial elements into the focus of infection, such as incision, aspiration, multiple puncture, cupping, etc., and last briefly speaks of the organization of the medical profession for carrying out the work of therapeutic immunization.

2. Fleming, in a somewhat lengthy article, speaks of the accuracy of the method of obtaining the opsonic index and in regard to some of the sources of error. He believes that the variation in the typical opsonic index of healthy individuals is very small and, therefore, normal serum furnishes a good standard for the comparion of infected persons from day to day; that the tuberculo-opsonic index is the same whether washed corpuscles are used from a healthy or tuberculous individual; that two practised observers can count the same slides and obtain results in almost all cases within 10%, and that estimations of the tuberculo-opsonic index of tuberculous patients can be performed, the results differing from each other by less than 20%, except in rare instances.

3. In speaking of the opsonic index in children, Wells concludes that a low opsonic index is not diagnostic in children under one year and that it is not inconsistent with health. His results seem to show that the healthy breast-fed infant possesses no advantages over the healthy artificially-fed child and that the anti-bacterial defense in children cannot depend upon the opsonic content of the serum.

4. White has found that the variations between the counts of different normal individuals employed on the same day and incubated with different batches are very slight, from 4 to 8%. He believes that the maximum experimental error is from 4 to 13%.

5. Greenwood, speaking on the same subject of the accuracy of the opsonic index, says that in the present state of the question there is no valid evidence that the limits of error do not excede 20% of the mean value; that it is most desirable in published results that the actual phagocytic counts from which the indices were calculated should be given.

6. Harris discusses, in a more or less general way, treatment by bacterial vaccines, first speaking of the history of this procedure. The greater part of the paper is on the subject of tuberculosis, although he speaks of colon infections and a few others. In tuberculosis the most favorable condition is that of enlarged glands in children, which he thinks almost always react well. The cardinal points to be observed in the use of bacterial vaccines are (1) proper vaccines; (2) the proper dose at the right time; (3) the factors which militate for and against local or general immunization and, as regards local immunization, the importance of the circulation.

7. Inman concludes (1) that early or febrile cases of pulmonary tuberculosis may be treated with advantage by means of pure air and graduated exercises. (2) That

the opsonic index is a valuable guide to such treatment and also gives useful information if inoculations of Koch's tuberculin are employed. (3 That rest is essential in febrile cases of consumption, and in these cases injections of tuberculin, using as a guide the opsonic index, is the treatment indicated.

8. Briscoe and Williams believe that their results in cases of pulmonary tuberculosis treated with tuberculin inoculations are unmistakably better than those without such vaccine. They are not yet certain whether the treatment by inoculation with increasing doses of vaccine, as practised by Trudeau, gives better results than the system of small doses with longer intervals. They believe that the opsonic index should be carefully watched during treatment.

9. Collier, speaking on the surgical view of the opsonic method, believes that the opsonic index is extremely valuable in guiding one to the indications for employing a vaccine and in regulating the dose. In tuberculosis, however, if sufficiently small doses are employed, frequent observations of the serum are not necessary.

10. Whitfield, discussing the treatment of skin diseases by inoculation after the opsonic method, believes that in generalized furunculosis the opsonic method surpasses all others. In acne the results are variable. In lupus and other forms of skin tuberculosis it is of value in those forms in which there is ulceration, but he does not believe that in advanced cases results will be as good as by the light treatment or by excision.

12. Horder gives an interesting article on ulcerative endocarditis and its treatment with vaccines. He dwells particularly on the importance of early diagnosis and believes that in the presence of valvular disease, no matter from what cause arising, the presence of fever, loss of flesh and color, hemorrhages, pain, should call for a bacteriologic examination of the blood. In 28 consecutive cases of the disease he has obtained positive blood cultures, there being streptococci in 18 instances. If the pneumococcus is regarded as a type of streptococcus the percentage of these cases rises to over 77. Drugs are of absolutely no value nor has he seen any good results from the most liberal use of bactericidal sera. For treatmen tby specific inoculation he describes in detail one case of aortic regurgitation in which there has been apparent recovery, although it is too early yet to speak definitely.

13. Walker considers genito-urinary tuberculosis and its treament with tuberculin under four headings: (1) genital tuberculosis; (2) urinary tuberculosis; (3) genito-urinary tuberculosis; (4) tuberculosis of the genital or urinary systems complicated by tuberculous disease elsewhere. He reports various cases illustrating these classes, going to show that tuberculin treatment finds its most promising application in primary and secondary senile tuberculosis and that it is of value as an adjunct to operative treatment in reno-vesical and genito-urinary tuberculosis. The opsonic index is an invaluable guide to the dosage and frequency of administration of tuberculin in genito-urinary tuberculosis. [J. B. H.]

Deutsche Medizinische Wochenschrift. No. 27.
July 2, 1908.

1. Bernhardt, M. *Clinical Lecture on the Treatment of Graves' Disease.*
2. *Trendelenburg, F. *The Operative Treatment of Pulmonary Embolism.*
3. Rinne. *The Differential Diagnosis between Appendicitis and Diseases of the Adnexa.*
4. *Kolle, W., and Schatiloff, P. *Fixation of the Complement in Relapsing Fever in Man and in Animals.*
5. Kraus, R., and Dörr, R. *The Standardization of Anti-Dysentery Serum.*
6. Brenil, A., and Nierenstein, M. *Further Observation on Resistance to Atoxyl in Trypanosomes.*
7. Hippel, A. *The Use of Deutschmann's Serum in Diseases of the Eye.*
8. Hoffman, Löhe, and Mulzer. *Inoculation of Syphilitic Virus into the Testicles of Monkeys and Rabbits followed by Chancre of the Skin at the Site of Injection.*
9. Jamin, F. *Recent Progress in the Diagnosis of Diseases of the Lungs.*
10. Dietrich. *Sarcoma of the Lymph Nodes resembling Granuloma.*
11. *Cnezda, J. *Melanuria occurring in a Case of Intestinal Tuberculosis.*
12. Spiethoff, B. *Experiences with Salt-Free Diet in Eczema, Strophulus and Pruritus of Infants.*
13. Blümel, K., and Ulrici, H. *The Treatment of Chronic Constipation.*
14. Lehnerdt, F. *End Results of Tracheotomy.*

2. Trendelenburg describes the second case of pulmonary embolism operated on by his method. The embolism occurred in a tabetic following spontaneous fracture of the femur. The symptoms pointed to a speedy death. After resection of the second rib, the pleural cavity was opened and then the pericardium. The aorta and pulmonary artery were next drawn forward; they had ceased to pulsate, the heart showed only the feeblest contractions and the respiration stopped. The pulmonary artery was incised, and with polyp forceps a thrombus 34 cm. long was pulled out, and three shorter pieces afterwards. Circulation and breathing returned and the patient lived for thirty-seven hours after the operation. At the autopsy an embolus was found in the left branch of the pulmonary artery; it had probably been overlooked at the operation. Trendelenburg believes that in future complete extraction of the embolus will be possible.

4. This article by Kolle arnd Schatiloff is a report of the results of the complement fixation method in human and experimental relapsing fever. Rats and mice after recovery from infection with the various types of spirocheta Obermeieri were immune to subsequent infection, but their serum contained no substances capable of fixing complement. In man, however, after convalescence from at least two attacks, there was regularly a specific fixation of the complement. This specificity extended to the various types of this organism; the serum being derived from patients infected with the European variety, fixation occurred with the corresponding antigen, but not with antigen from the African and American types. These researches show that Wassermann's method is applicable to the spirochete of relapsing fever, and that the substances which fix the complement are not identical with bactericidins, but are substances *sui generis*.

11. Cnezda adds a case of melanuria occurring *without* malignant disease to the few already on record. The diagnosis of melanosarcoma was made on the ground of the presence of melanogen in the urine, but the operation revealed tuberculosis of the intestine and mesenteric glands. The autopsy showed in addition nephritis and amyloidosis. [W. T.]

No. 28. July 9, 1908.

1. *Wieting-Pascha. *The Operative Treatment of Angiosclerotic Gangrene by Means of Arterio-Venous Intubation.*
2. *Ditthorn, F., and Schultz, W. *Cutaneous Reactions with Iron Precipitates of Substances derived from Tubercle Bacilli. Preliminary Report.*
3. *Conradi, H. *A Simple Clinical Method for the Cultivation of Meningococci.*
4. Lewinski, J. *A Case of Cerebrospinal Syphilis with Brachial Plexus Paralysis and Extensive Involvement of the Ocular Sympathetic Nerves.*
5. Oerum. *The Determination and Functional Value of Hemoglobin.*
6. Stich. *The Results of Operative Treatment of Tuberculosis of the Bones of the Foot.*
7. Muskat, G. *The Treatment of Genu Valgum.*
8. Gans, H. *Spontaneous Rupture of the Uterus during Delivery.*
9. Seefelder. *Fetal Inflammation of the Eyes.*

1. Wieting-Pascha describes what he claims to be the first case of successful arterio-venous transplantation for gangrene. The patient, a man of forty years, had already lost one leg from gangrene, and there were beginning symptoms of the same disease in the other foot, i. e., coldness, lividity, paresthesiæ and pains. Gangrene had not yet developed, but there was evidently danger that it would shortly. He transplanted the femoral artery just below the origin of the profunda into the femoral vein, passing

the cut end of the artery through a slit in the vein and fastening it in place by circular sutures at this point. As a result of this operation, the foot became warm again and all symptoms disappeared. Two months later there were no signs of a relapse.

2. Ditthorn and Schultz have experimented with precipitates of tuberculous substances obtained by treating them with ferric chloride with a view to modifying Pirquet's cutaneous reaction so that it will indicate only cases of *active* tuberculosis. They have been able to obtain positive reactions in this way in a smaller percentage of cases than by Pirquet's original method. Further reports are to follow.

3. Conradi describes a simple method of cultivating meningococci when hydrocele or ascites agar is not to be obtained. It consists in using the fluid obtained by lumbar puncture as a culture medium. The fluid is first centrifugated and the supernatant liquid heated at 60° for an hour. One part of this fluid is then added to three parts of neutral agar and poured into Petri dishes, and the sediment obtained by centrifugation is planted on this medium. If the dishes are put within other larger dishes in which there is cotton moistened with corrosive sublimate, a moist chamber is obtained, and the meningococci grow quite as well as upon hydrocele agar. [W. T.]

Münchener Medizinische Wochenschrift. No. 28. July 14, 1908.

1. v. Baumgarten. *Hemolysins, Bacteriolysins and Opsonins.*
2. *Böhme, A. *Investigations on the Opsonins of Typhoid and Cerebrospinal Fevers.*
3. Holzbach, E. *The Value of Spinal Anesthesia in Gynecologic Laparotomies.*
4. *Hecker. *Periodic Acetonemia in Older Children.*
5. Schumm, O. *The Demonstration of Blood in the Urine by Spectroscopic and Certain Chemico-Spectroscopic Procedures.*
6. Saenger, M. *The Reaction of Pulmonary Emphysema on the Course of Asthma.*
7. Wahl, K. *What may we expect from the Present Treatment of Scoliosis?*
8. Schweckenbecker, A. *Menthol Poisoning in Man.*
9. Roemheld, L. *"Milk Days" in the Cure of Obesity.*
10. Reismann. *Extreme Cicatricial Contracture of All the Fingers of the Right Hand in Claw Form.*
11. Fischer, H. *Double Vaginal Speculum for Simultaneous Aspiration and Irrigation.*
12. Braatz, E. *Historic Note on the Treatment by Suction of Wounds due to the Bite of Rabid Animals.*
13. Kämmerer, H. *A New Clinical Method of Opsonin Determination.*

2. Böhme finds the sources of error in the opsonic estimation of staphylococcus and tubercle infections so great as to make the results very far from reliable. He has made a number of observations relative to the opsonins in the blood of typhoid patients and finds that their opsonin content against the B. typhosus can be readily tested by using a diluted serum. In the course of typhoid fever, the writer found a marked increase in the opsonin content during convalescence. In one case a relapse occurred, in spite of the increased opsonic content. The inactivated serum of three typhoid patients showed a well-marked opsonic action, which, however, was much less than that of active normal serum; also the action of the inactive serum was much increased after addition of normal serum. The increase in opsonins is then due to an increase in certain thermostable substances. The reactivity of the inactivated serum is probably due to a combination resembling that of amboceptor and complement of active serum. The writer also has found that phagocytosis may be much increased by shaking the mixture of phagocytes and serum.

4. Hecke reports one typical case of cyclic vomiting with acetonemia, and four other cases of gastro-intestinal disturbance associated with acetonuria in young children. He reviews the different ideas on the subject, and believes himself that the condition is probably due to the acetonemia which arises from a breaking up of the fats of the body. In some cases this is undoubted. Late work has shown that the lymphocytes have a marked influence on the resorption of fats. In one of his cases the leucocyte count was very low. The writer suggests further and more careful blood examinations in this condition.

[R. D.]

Correspondence.

THE DISSEMINATION OF TYPHOID FEVER.

State Board of Health,
Boston, Sept. 1, 1908.

Mr. Editor: In the second paragraph of your editorial entitled, "Typhoid Fever and Hazen's Theorem," in the current number of the Boston Medical and Surgical Journal, I note the following statement:

"Nowadays the supervision exercised by the sanitary authorities is, no doubt, such that if any milk is responsible for typhoid dissemination, the infection must have entered this fluid after its delivery to the consumer."

This is so far from being the case in Massachusetts that I beg to call to your attention the results obtained from painstaking investigations, made by the State Board of Health, of a few of the large outbreaks of typhoid fever within the last two years.

During September and October, 1906, more than one hundred persons living in three separate communities — Natick, Wellesley and Needham — were stricken with typhoid fever within a relatively short period. A very large proportion of the victims were users of milk sold and delivered, who obtained a part of their supply from a common source, — a dairy where one of the employees was found ill with the disease. This epidemic is instructive as showing the possible results of the accidental infection of milk with typhoid bacilli at the farm, and the importance of protecting market milk from such accidents.

During July, August, and the first few days of September, 1906, nearly fifty persons in Lynn were seized with typhoid fever. Of this number 40, seized after Aug. 14, were supplied with milk by one milkman upon whose premises the milk received its infection. This outbreak illustrates the importance of supervising the handling of milk by dealers.

In Jamaica Plain, this year, during a period of six weeks following March 31, 371 cases of typhoid fever, 348 primary and 23 secondary, proved to be in families supplied by two milk dealers, who, in common with eight other milkmen, obtained their supply from the car of a contractor who derived this particular carload from eight towns, in none of which had a case of typhoid fever occurred during the previous three months, excepting that of an Italian laborer in no way connected with milk production; so that while it was certain that the first infection did not occur at the place of production, and was not due to the fault of the farmer, it was equally certain that one of the two dealers mentioned, during two weeks of ambulant typhoid fever, had ample opportunity to infect his supply, and to re-infect it again and again, and to spread the infection to the other dealer's supply through the non-sterilized cans of the contractor which they used in common.

This and many other recent outbreaks of milk-borne diseases show conclusively the need of a more careful supervision of the methods of handling and delivering milk after its arrival in the city.

Last April a bill was reported to the legislature authorizing the State Board of Health and the Dairy Bureau to make such regulations relative to milk as they deemed suitable or necessary for the protection of the public health in regard to the production, transportation and sale of milk so as to secure purity, cleanliness and healthfulness. This bill was offered by a good many intelligent farmers and by interests that favor clean milk. The State Board of Health had nothing to do with it. The original bill was passed by the Senate to be engrossed, and then sent to the House for concurrence. It was there amended and referred to the next General Court.

Yours very truly,
Wm. C. Hanson.
Acting Secretary.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUGUST 22, 1908.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	5	1
Chicago	—	—	Waltham	7	3
Philadelphia	—	—	Pittsfield	—	—
St. Louis	—	—	Gloucester	10	6
Baltimore	169	60	Brookline	4	1
Cleveland	—	—	North Adams	7	5
Buffalo	—	—	Chicopee	8	3
Pittsburg	—	—	Northampton	5	—
Cincinnati	—	—	Medford	6	1
Milwaukee	—	—	Beverly	4	—
Washington	—	—	Leominster	1	1
Providence	—	—	Hyde Park	2	1
Boston	275	132	Melrose	3	2
Worcester	25	8	Newburyport	—	—
Fall River	39	21	Woburn	3	—
Cambridge	27	14	Westfield	—	—
Lowell	60	31	Marlboro	2	—
Lynn	20	8	Revere	6	5
New Bedford	33	23	Attleboro	6	3
Springfield	24	6	Peabody	—	—
Lawrence	29	12	Adams	3	2
Somerville	17	12	Clinton	2	2
Brockton	13	7	Gardner	4	4
Holyoke	18	11	Milford	6	1
Malden	13	4	Watertown	—	—
Chelsea	6	1	Plymouth	—	—
Newton	5	1	Weymouth	1	—
Salem	13	6	Framingham	4	1
Haverhill	16	8	Southbridge	3	1
Fitchburg	11	7	Wakefield	—	—
Everett	6	3	Webster	—	—
Taunton	13	7	Arlington	1	—

OFFICIAL LIST OF CHANGES OF STATION AND DUTIES OF COMMISSIONED AND OTHER OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED AUG. 12. 1908.

MEAD, F. W., surgeon. Granted leave of absence for one month from Aug. 26, 1908. Aug. 7, 1908.

WOODWARD, R. M., surgeon. Granted leave of absence for thirteen days from Aug. 24, 1908. Aug. 6, 1908.

COBB, J. O., surgeon. Directed to proceed to Chicago, Ill., for special temporary duty, upon completion of which to rejoin his station at Milwaukee, Wis. Aug. 6, 1908.

GOLDBERGER, J., passed assistant surgeon. Detailed to represent the service at the International Fishery Congress, to be held in Washington, D. C., Sept. 22–26, 1908.

VOGEL, C. W., passed assistant surgeon. Relieved from special temporary duty at San Juan, Porto Rico, and directed to report at Bureau, Washington, D. C. Aug. 7, 1908.

SWEET, E. A., assistant surgeon. Granted leave of absence for two months from Aug. 18, 1908. Aug. 7, 1908.

MILLER, W. W., assistant surgeon. Granted leave of absence for six days from July 27, 1908, under paragraph 191, Service Regulations.

DUNN, JAMES, acting assistant surgeon. Granted leave of absence for thirty days from Aug. 17, 1908. Aug. 7, 1908.

GUSTETTER, A. L., acting assistant surgeon. Granted leave of absence for two days from Aug. 10, 1908. Aug. 6, 1908.

HICKS, B. I., acting assistant surgeon. Granted leave of absence for twenty-three days from Aug. 14, 1908. Aug. 10, 1908.

MCGINNIS, R. H., acting assistant surgeon. Leave of absence granted July 17, 1908, for fifteen days from Aug. 17, 1908, revoked. Aug. 10, 1908.

SEAVEY, L. T., acting assistant surgeon. Leave of absence granted Acting Assistant Surgeon Seavey amended so as to grant him twenty-one days from Aug. 3, 1908. Aug. 7, 1908.

TARBELL, B. C., acting assistant surgeon. Excused from duty without pay Aug. 31 to Sept. 30, 1908, inclusive. Aug. 10, 1908.

WAKEFIELD, H. C., acting assistant surgeon. Granted leave of absence for twelve days from Aug. 8, 1908. Aug. 10, 1908.

GAHN, H., pharmacist. Granted leave of absence for eleven days from Aug. 10, 1908.

PROMOTION.

Pharmacist NEWTON C. COMFORT promoted to pharmacist of the second class. Aug. 7, 1908.

APPOINTMENT.

Dr. LEROY M. STOWE appointed an acting assistant surgeon for duty in the office of the American consul at Tampico, Mexico. Aug. 7, 1908.

BOARDS CONVENED.

A board of medical officers was convened to meet at Baltimore, Md., Aug. 12, 1908, for the purpose of making a physical examination of a surfman of the life-saving service. Detail for the board: Passed Assistant Surgeon J. T. Burkhalter, chairman; Assistant Surgeon H. J. Warner, recorder. Aug. 6, 1908.

A board of medical officers was convened to meet at San Francisco, Cal., Aug. 14, 1908, for the purpose of making a physical examination of an officer of the revenue-cutter service. Detail for the board: Surgeon H. W. Austin, chairman; Passed Assistant Surgeon W. W. King, recorder. Aug. 7, 1908.

CHANGES IN THE MEDICAL CORPS, U. S. NAVY, FOR THE WEEK ENDING AUG. 29, 1908.

W. S. HOEN, passed assistant surgeon. Ordered to duty with flotilla of lighthouse vessels en route to Pacific coast.

W. A. MCCLURG, medical director. Detached from duty as a member of the Naval Examining and Naval Medical Examining Boards, Washington, D. C., Sept. 1, and ordered home.

E. M. BROWN, passed assistant surgeon. Unexpired portion of sick leave revoked; ordered to the Naval Recruiting Station, Los Angeles, Cal.

J. T. DUHIGG, assistant surgeon. Detached from the Naval Recruiting Station, Los Angeles, Cal., and ordered to duty with the Pacific torpedo fleet.

G. S. HATHAWAY, assistant surgeon. Detached from the Naval Hospital, Boston, Mass., and ordered to Washington, D. C., Sept. 1, for examination for promotion, and then to wait orders.

J. A. BIELLO, assistant surgeon. Detached from duty with the Pacific torpedo fleet and ordered to the Naval Hospital, Mare Island, Cal.

J. M. STEELE, medical inspector. Detached from the Navy Yard, Portsmouth, N. H., Sept. 18, and ordered home.

J. A. MURPHY, surgeon. Detached from the "Dolphin" and ordered home to wait orders.

N. T. MCLEAN, passed assistant surgeon. Unexpired portion of leave revoked; detached from the Naval Station, New Orleans, La., and ordered to the "Dolphin."

C. W. O. BUNKER, assistant surgeon. Detached from the "Arkansas" and ordered to the "Montgomery."

F. E. SELLERS, assistant surgeon. Detached from the "Nevada" and ordered to the "Texas" when commissioned.

F. H. BROOKE, assistant surgeon. Detached from the "Montgomery" and ordered to the Naval Hospital, Boston, Mass.

H. H. LANE, assistant surgeon. Detached from duty in the Department of Government and Sanitation, Isthmian Canal Zone, Panama, and ordered to course of instruction at the Naval Medical School, Washington, D. C., Oct. 1.

H. W. B. TURNER, assistant surgeon. Ordered to the Naval Medical School Hospital, Washington, D. C., for duty.

SOCIETY NOTICE.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION. — The thirty-fourth annual meeting of the Mississippi Valley Medical Association will be held in Louisville, Ky., Oct. 13, 14, 15, 1908.

BOOKS AND PAMPHLETS RECEIVED.

The Operation for Thrombus of the Sigmoid Sinus and Internal Jugular Vein, of Otitic Origin. By Frank Allport, M.D. Reprint.

Cataract Extraction. Being a Series of Papers with Discussion and Comments read before the Ophthalmological Section of the New York Academy of Medicine, 1907–1908. Edited by J. Herbert Claiborne, M.D. New York: William Wood & Co. 1908.

Estimation of the Renal Function in Urinary Surgery. By J. W. Thomson Walker, M.B., C.M. (Edin.), F.R.C.S. Illustrated. London, Paris, New York, Toronto and Melbourne: Cassell & Co., Ltd. 1908.

The Extra Pharmacopœia of Martindale and Westcott. Revised by W. Harrison Martindale, Ph.D., F.C.S., and W. Wynn Westcott, M.B. (Lond.), D.P.H. Thirteenth edition. London: H. K. Lewis. 1908.

Original Articles.

THE X-RAY AND FRACTURES.*

BY FREDERICK J. COTTON, M.D., BOSTON.

Before the era of the x-ray we seemed to have reached about the limit of our information about fractures, and our fracture lore, based in the main on the wonderful observation of men like Astley Cooper, Dupuytren, Nélaton, Malgaigne, R. W. Smith and Hamilton, had reached that stage of dogma where knowledge is too largely a matter of weighing the opinions of others.

Then came the x-ray, and for about a decade a great many observers have had opportunity to study fractures with the aid of a new and wonderful aid to diagnosis.

The total number of cases so studied has been enormous, and the results of study have in a large measure been made available, by publication, for comparison and study. As a natural result we have learned much; our whole knowledge of fractures seems transformed, viewed, as it were, in a new illumination, and a new generation is growing up who can hardly think of fractures except in terms of the skiagraph and are impatient with, if not neglectful of, the older means of diagnosis.

For ten years now we have had pretty good x-rays to work with; the method is no longer new. We should be able to judge now pretty accurately of the additions to our knowledge and skill due to the data accumulated, and to judge in what way the skiagraph may be of most use to us in our routine work.

The addition to our fund of knowledge is probably the most important service of the x-ray.

Increase of knowledge. — Fractures occur in types, pretty constant types at that. We have of late been able to determine in how far these types are constant, what minor variations they show, how frequently they occur. Previously we had only museum specimens and unconfirmed clinical diagnoses to study. Now we may have for each case a tolerably accurate diagnosis of detailed lesions.

Many types supposed to be rare prove common; for instance, comminuted Colles fracture, fracture of the ulnar styloid, fractures and luxations of the carpus.

On the other hand, lesions once commonly diagnosed are now hardly heard of, as, for example, fracture of the acromion, intracapsular fracture of the neck of the humerus, fracture of the coronoid process at the elbow, uncomplicated dislocation of the radius at the elbow. We have learned also the frequency with which joint fractures are found as complications of apparently typical dislocations.

There is also a whole series of joint fractures about which we knew almost nothing in the old days. For example, in this list are the elbow fractures so common in children. They used to be classified like those of adults on a geometric basis. Work with skiagraphs has demonstrated clearly that this class really ought to be looked on as epiphyseal injuries. T fractures and fractures of the internal condyle occur in adults, and we used to diagnose them glibly in children as well. We have learned that they do not happen. The lesions of the humerus at the elbow in children are the supracondylar fractures, the separation of the whole epiphyseal end of the bone, separation of the epiphysis of the external condyle (forming a distinct outer half of the whole epiphyseal end), and separation of the little epiphysis of the internal epicondyle, usually entirely outside the joint. These comprise the lesions which in fact occur.

Moreover we have found that the dreaded gunstock deformity is a result of supracondylar lesions only, and has nothing to do (though this was long taught) with fracture of either condyle. These have been among the most notable, though by no means the only instances where our knowledge has been broadened.

Our knowledge of types seems now pretty complete. We have learned what to expect and look for. But this is not all or even the best of it, because in learning what to look for we have also learned how to look.

Personal training.— Those who have used the x-ray as it should be used, merely as one means of examination, have vastly increased their own diagnostic powers. We have learned new signs; have come to associate certain displacements, certain limitations of motion, certain points of localized tenderness, and so on, with the lesions to which they are appropriate; have, in short, by means of the x-ray, greatly bettered our capacity to do without the x-ray. So it is in cases of carpal fracture — once they were utterly unrecognized; then admitted and studied; to-day we know that after a fall on the palm localized tenderness over the scaphoid usually means scaphoid fracture; that localized thickening added to this, with loss of extension and radial abduction, means displacement of the broken pieces; we hardly need the x-ray at all. So with fractures of the radial head; formerly they were not to be diagnosed at all; now, as a result of x-ray study, we may diagnose them without needing more than the results of palpation and the testing of the loss of pronation and supination (with flexion and extension intact) to justify diagnosis.

In this way it has been possible for men favorably situated to train themselves to a personal efficiency in fracture work a good deal beyond what was attainable even a few years ago. Every case in which the diagnosis once made is checked and proved or disproved definitely is worth many not so checked for purposes of education, and it is in furnishing such a check that the x-ray serves its second purpose, — that of aiding in *personal* education.

So much for the extension of the world's fund of knowledge, and our own education in skill.

Routine use. — The question of more direct bearing perhaps is what use we are to make of the x-ray in individual cases in practice — in what cases we need it, and when and how it is to be used.

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* Read before The Massachusetts Medical Society, June 9, 1908.

Much nonsense has been written about the necessity of a skiagraph as a preliminary to treatment of any fracture, of criminal neglect in failing so to use it. This is the sheerest nonsense, and I wish to be clear in disclaiming it. As a rule such use is unnecessary and it is often impracticable.

Exceptional fractures. — There are a few classes of cases in which skiagraphy does necessarily precede any *real* treatment. Let us see what they are in fact. In a fracture of metatarsals by direct crushing, for example, we may perhaps be able to guess at the lesions, but can be sure of nothing; until we get the plate all we can do is to put the greatly swollen foot at rest in a comfortable position. Fractures of the scapula, some injuries about the shoulder-joint, crushing injuries of the hand and wrist, fractures of the pelvis, a few hip-fractures, some injuries to ankle and tarsus, often do depend on the x-ray for diagnosis, in some cases because of swelling, in some because of the essential difficulty of getting at any serviceable landmarks. In all these cases, however, simple retentive apparatus, till we can get an x-ray, is adequate treatment for the first one or two or few days. The same may be said of the more obscure and atypical fractures into and about joints — until we can make our diagnosis we can rest with palliative treatment.

Where we are dealing with obscure luxations, luxations complicated with fracture, or joint fractures with much displacement, the problem is different, for these we cannot let alone. The thing to do here is to make our diagnosis as closely as may be, then reduce the dislocation or correct the displacement as best we can, and wait for the plate, recognizing (and telling the patient) that we may have to have a second reduction later. In point of fact, the first reduction so made is often all right and no second trial is needed.

The cases where an *accurate* diagnosis is essential to reduction of *gross* displacement are fortunately limited, so far as I have seen, to a few luxations with or without fracture in the tarsus and foot — a very trifling percentage of cases.

Other threatening conditions, like separation of the femoral epiphysis at the knee, Pott's fracture by inversion, with great displacement, etc., can be reduced, at least accurately enough to avoid the dangers of delay, even without knowledge of exact details.

From this it will appear that I am no thoroughgoing believer in the necessity of a primary x-ray, even in the classes just cited. It is well that such early x-rays are not necessary, for they are often unobtainable under conditions of practice as they exist.

Routine fractures. — Now as to the run of fractures and luxations — the routine cases coming into our charge. As we have said, the great majority fall into perfectly well-recognized classes. Aided by the skiagraph we have evolved more precise methods of differentiating types than we used to have.

I maintain firmly that in the great majority of cases a properly trained surgeon can make his diagnosis, so far as *practical* details go, about as well as without the x-ray. If he has not the skill so to make a diagnosis, he is unlikely to be greatly helped by x-rays. Those of us who have used the x-rays most know best how easily one may be misled by this as by any special diagnostic method.

To-day we have, most properly, skiagraphers — specialists — who can not only take plates, but can interpret them. Personally, I doubt if a man who has to have plates interpreted by specially trained men had not better leave fractures to men of special training, for one of the services of the x-ray has been to raise the standard of skill that may reasonably be expected.

I do not mean to decry early taking of x-rays, if convenient, but wish merely to emphasize my belief that they are not a *necessary* routine. Nor do I mean that every Colles' fracture is a specialist's job; only, if the practitioner understands how to recognize direction and grade of displacement, can reduce and can gauge the perfection of his reduction, he is competent enough to do without both specialist and x-ray in routine cases, though he will usually want an x-ray for purposes of *record*.

Not all men are so competent, and the practical danger is that men who know neither diagnosis nor treatment will, with a diagnosis furnished, undertake treatment they cannot handle properly.

Moreover, leaning back on the x-ray makes for neglect of training in manipulation and a progressive loss of competence in this work. This we see in house-officers in the hospitals, and it is the reason, some of us believe, why fracture work in the big hospitals hardly *averages* as good as ten years or more ago. A man who does not manipulate fractures for diagnosis is unapt to manipulate well for reduction, or to be a first-rate judge of the results of his manœuvers. And, after all, the preservation of the general line, the reduction of *palpable* displacements of fragments, is what concerns us; fracture treatment is and will be far from attaining exact repositions of broken surfaces.

My belief, then, is that the routine treatment of ordinary fractures should consist of the most searching examination, immediately, or if great swelling is already present, then within a day or two, an examination best conducted under ether in most cases; that we should thus establish with all possible certainty and detail just what we are dealing with, perform any necessary reduction, and "put up" the fracture.

Importance of x-rays after reduction. — Then, in a day or two, if the patient can walk, but within two weeks in any case (save in femur fractures), we should get an x-ray. An x-ray at this time tells us not only all there is to tell as to what the lesion is, but tells us also how successfully we have dealt with it. And best of all it tells us this at a time when we can still remedy any defects, whether due to wrong diagnosis or to faulty treatment.

And in routine hopital work I find it necessary to interfere later in three cases of bad results of treatment to one where the diagnosis was essentially at fault. This is mainly because so few fractures, relatively, fall outside the recognizable types.

Malposition recognized within a fortnight may almost always be reduced by handling, rougher handling, of course, than is needful in a fresh case. If through misfortune or fault the skiagraph is not taken till three weeks or more have gone by, open operation may be necessary for any needful corrections. Of this more later. If we do interfere as a result of the x-ray review, we are in duty bound to review our amended result in the same way.

My contention that the time for the x-ray is after, not before, reduction is the rule based on the following considerations:

(*a*) Immediate x-rays are hard to get, even in hospitals; any considerable delay in reduction means poorer reductions as a rule.

(*b*) X-ray examination does not take the place of the time-honored examination in anesthesia, and this examination properly done, with immediate replacement of fragments, usually fulfills the immediate indications.

(*c*) Considerations of difficulty in transportation, expense and procrastination make it unlikely that more than one x-ray will be taken in a given routine case. This one may best be taken when it will check both diagnosis and corrected position, and will help in prognosis.

Late x-rays. — Now as to late x-rays taken to inform ourselves as to end results. I believe they should be taken only for exceptional reasons. Nearly all cases of fracture call for an x-ray at some time, but this is not the time In the best cases the x-ray shows abnormal positions of bone ends; in less good cases things always appear far worse than they are. Accurate reposition is almost never attained except by open operation, but it will be years before the laity, including the courts, will appreciate this. What is important is the obtaining of good functional results, an entirely different matter.

The only possible service (except that of record) to be rendered by the x-ray in late cases is the explanation of defective functional results *already observed* with a view to bettering the results by operation or otherwise.

Where this is called for, well and good, otherwise I confess I have no interest in having end-result skiagraphs; ordinarily they will tell nothing except what, clinically, are misstatements, or half truths. Remember that the x-ray does not tell anything except the relation of the original fractured bone ends and surfaces. It shows callus little if at all, and gives no credit for any repair for months after such repair by other tests seems complete.

In the usual run of fractures, then, I believe we shall be wise to use the x-ray in practically all cases, at least for record, repeating it if we may, but certainly using it at such period as will enable us to establish or confirm the diagnosis and to check our treatment. It should not be used *in place of* skilled manipulation for diagnosis, or as the arbiter of end results.

OPERATIVE SURGERY OF FRACTURES.

Next to the service done by enlarging and formulating our scientific knowledge of fractures, perhaps the best service of the skiagraph is that it has opened up a great field of surgery in the way of operative treatment. I say this advisedly, aware, of course, that many operations on fractures had been done before the time of the x-ray, but anything like the possible precision of work and results of to-day was out of the question, and would be to-day were it not for the skiagraph. And the field of such operative work is increasing very rapidly to-day.

I do not refer here to work on compound fractures; any improvement in handling these has been due to better operative technic, and has nothing to do with x-rays. It is the increasing range of lesions, old and new, that we recognize as doing badly, or going to do badly, or having ended badly without operation, that are here to be considered.

As our demand for better results goes on, as operation becomes safer, and as special study of methods and of practical results attainable in this way goes on, we are likely to see wider use of operative measures in proper hands, both on fresh cases, in old cases and still more in cases of threatened, not yet accomplished, poor results.

Without skiagraphy this sort of surgery could never have attained anything like its present level, either as to knowledge of what may be done or as to the technic of handling the individual case.

Operable cases may be divided roughly into two classes, fresh and old. The fresh cases are those in which fragments are irreducible or cannot be molded into place, or cannot be kept in place after a fair trial, or cases in which involvement of joints, with loose or unmanageable fragments, or lesions of vessels, or more often of nerves, make some remedy imperative.

In these cases our problem is, as a rule, the restoration of original conditions with exact replacement of the fractured bone-ends with or without the use of staples, nails, wire or absorbable sutures to retain the position. In order to be able to do this we want the best possible data in advance — to be gotten only by careful study of good x-ray plates. Only those who have tried it know how curiously difficult it often is to make out the exact shape of bone-ends in an open wound. Particularly is this true if time enough has elapsed for the formation of great shapeless callus masses and for the establishment of the extreme vascularity of the whole region that characterizes the stage of repair.

The older cases are those in which we have vicious union with malposition of various sorts, variously interfering with function, those in which long-delayed union is the reason for interference, those in which we wish to mitigate deformity as such, and finally cases of obstinate involvement of nerve trunks due to stretching, pressure or involvement in callus.

Each case is a problem in itself, to be solved along lines of operative orthopedics, based on special experience. In most cases we cannot hope to restore original conditions but must study to remove or equalize displacements, remove impeding fragments, restore or make over damaged joints. Often we do not even try to follow the old lines of lesion but work in and through sound bone to produce our results. The whole region about a fracture is for months tremendously vascular, matted with callus excessively hard to work in because of the confounding of anatomical structures. All work done is under the restriction of care not to injure vessels or, more important still, the nerve trunks. Moreover, while great violence is often necessary and is safe enough, prolonged time of operation brings grave risks of sepsis.

If one does not start with a clear understanding of detailed conditions and a definite plan of action, results are likely to be poor. And such proper understanding needs most careful and skillful interpretation of *good* skiagraphs.

Under proper handling nearly all bad fracture results may be greatly improved, and the good results attainable in some cases are astonishing. Because this line of work is still in course of development, and because little has been published yet by those who have done most, the general medical public has no adequate idea of what is possible even now. This is no place to go into much detail, but possibly a brief random list of cases of my own, successfully operated on, may be of use in indicating the range of conditions in which we can interfere with good result. Sutures of patella and olecranon, etc.; in short, the generally recognized operations, are omitted.

(*a*) Acromio-clavicular luxation, fresh, irreducible, wired.

(*b*) Separation of three ribs from their cartilaginous ends; reduced by open operation; held by pins driven through cartilages into rib ends; held ten days; permanent reduction.

(*c*) Oblique fracture of the surgical neck of the humerus; pressure on the vein with threatened gangrene of the arm; excision of the head; reduction of the head of the shaft after rounding it off; immediate relief to circulation; useful shoulder.

(*d*) Separation of the upper humeral epiphysis in a boy; great deformity; irreducible. End of shaft found buried in the deltoid; epiphysis stitched in place; perfect result.

(*e*) Reduction of old subcoracoid luxation.

(*f*) Open reduction of a fracture through the tuberosities with fracture of the glenoid.

(*g*) Reduction of old elbow luxations, three cases, one practically perfect, two fair results.

(At the elbow, old luxation is usually accompanied with much new bone growth. Some of these bad cases are undoubtedly cases rather for excision.

(*h*) Fresh (reduced) elbow luxation. Extreme pain and some paralysis from pressure on ulnar nerve. Internal epicondyle found reduced *into the* joint and a strip of periosteum attached was pulled taut over the ulnar nerve. This was cut, the epitrochlea reduced and sutured in place. Immediate relief of pain and of the paralysis. Perfect result.

(*i*) Elbow luxation (reduced) several weeks old, muscles supplied by ulnar nerve paralyzed, wasted, showing reaction of degeneration. Epicondyle found wedged in at edge of joint, nerve stretched over it very tightly, held by fibrous bands. Condyle removed. Recovery after two months. Perfect result.

(*j*) Supracondylar osteotomy for "gunstock" deformity. Four cases, good results.

(*k*) Excision of a spur on the lower end of the shaft in front (in supracondylar fracture) limiting flexion at a right angle. Four cases, improvement in all.

(*l*) Fracture of internal condyle with deformity and non-union; partial excision of elbow.

(*m*) Supracondylar fracture with irreducible deformity and threatened slough; trimming; replacement; suture; good result.

(*n*) Excision of head of radius in comminuted fracture of the radial head limiting motion.

(*o*) Excision of loose fragments and resection of part of radial head for fracture.

(*p*) Replacement of luxated and loose upper end of radius; formation of a false orbicular ligament of muscle fascia and kangaroo tendon; excellent result with rotation preserved.

(*q*) Several cases of refreshing ends of broken forearm bones and replacement for deformity, for non-union, etc.

(*r*) Case of such replacement with dissection of median and ulnar out of scar tissue over the displaced ends. Union. Recovery from paralysis in about four months.

(*s*) A number of cases of open reduction of relatively recent Colles' fracture or osteotomy for deformity in old Colles' fracture.

(*t*) Resection of fragment in scaphoid fracture with loss of motion. Four cases.

(*u*) Fracture of scaphoid with backward dislocation of distal row of carpal bones; total resection of wrist; perfect result.

(*v*) Similar case, earlier; excision of whole scaphoid; open reduction of luxation; excellent result.

(*w*) Open operation by anterior incision, with fixation in abduction, on 3 cases of non-union in hip fracture. Union and good functional result in all.

(*x*) Open operation on high femur fracture for malunion; suture; fair result.

(*y*) Lower-leg fractures, various operations for deformity of all sorts and directions. Uniform improvement.

(*z*) Potts' fracture with outward displacement with or without backward luxation of the foot. Osteotomy of fibula and of internal malleolus, with remodeling of the joint. Six cases; excellent results, with ankle motion in all.

(a^1) "Inverted Potts'" fracture with deformity and with non-union of the tibia. Open operation; osteotomy of tibia, refreshing of tibial surfaces, reduction. Two cases, tibial fragment sutured in one, pinned with a drill in the other.

(b^1) Two cases of mediotarsal luxation. One after a year, perfect result; one after three years, resection of part of astragaloid head; reduction. Very useful foot.

(c^1) Os calcis, a half dozen fresh cases with obliterated heel and loss of lateral motion of foot, operated by my method of putting in a spindle over the top of the os calcis between tendo achillis and tibia, using this as a grip to break up and reduce the impacted fracture, then holding it in corrected position, and hammering it laterally, the foot on a sand-bag, so as to secure reimpaction.

(d^1) Os calcis, extreme valgus, neck of os calcis sawed, heel displaced in and forward. United, improved.

(e^1) Several cases of removal of spurs in various sites resulting from os calcis fracture.

The range of remediable conditions is large, and with good x-rays, first rate aseptic conditions, skilled assistance and experienced operator, results are attainable that make this already a fruitful field though still in the early stages of cultivation and development. And on the x-ray and its intelligent use much — most — of its development must depend.

THE USE OF TUBERCULIN AS A DIAGNOSTIC AGENT IN PULMONARY TUBERCULOSIS.*

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In doubtful cases of pulmonary tuberculosis the diagnosis must often rest on the presence of slight impairments of resonance, slight changes in breathing and a few râles. Well-trained men frequently disagree as to the presence or absence of slight impairments of resonance. The continued presence of râles at one apex usually means tuberculosis, yet this is by no means invariable. Koch [1] states that 15% of cases of catarrh of the apex did not react to tuberculin, and the subsequent histories of all that could be followed did not prove them to be tuberculosis clinically. Lord [2] has reported cases of influenza which bore a perfect resemblance to tuberculosis clinically but which did not react to tuberculin. Some of these cases had a family history of tuberculosis, suffered from fever and hemoptysis and yet on autopsy the lungs were free from tuberculosis. Boggs [3] has also reported cases of influenza infection which simulated tuberculosis.

At the Rhode Island State Sanatorium we have found it necessary to give the tuberculin test in 2% of moderately advanced cases, in 31% of incipient cases and in 5% of all cases. At the Adirondack Cottage Sanitarium [4] the test is given in 2% of moderately advanced cases, in 26% of incipient cases and in 14% of all cases. At the Massachusetts State Sanatorium the test is found necessary in "less than one sixth of incipient cases." [5]

In many of the cases tested in sanatoriums the physicians feel that the chances are greatly in favor of tuberculosis being present, but that there is nevertheless a slight room for doubt and that in the interest of both patients and institutions this doubt should be removed or reduced to the minimum.

Some of the cases so tested do not react and are discharged as non-tuberculous. This happens in 3% of the cases tested at the Rhode Island Sanatorium and in 6% of those tested at the Adirondack Cottage Sanitarium. Wilkinson [6] cites Weicker, who in one year tested and refused 48 non-tuberculous patients who had been diagnosed by good examiners as early cases.

It would doubtless be necessary to test even a larger percentage of incipient cases were they not subjected to delay in diagnosis, during which time the appearance of bacilli in the sputum removes all doubt. At the Rhode Island State Sanatorium 38% of the incipient cases having bacilli in the sputum have been subjected to delays in diagnosis averaging six months.

If sanatorium physicians need the tuberculin test in 15% to 30% of their incipient cases, some of which have been subjected to delay, what must be expected of the general practitioner who sees the disease at its onset? The sanatorium physician necessarily receives only those patients whose histories have been reviewed by others and in whom the presumption of tuberculosis is strong, while the general practitioner sees many kinds of infections of the respiratory tract, the majority of which are not tuberculous. That keenness for searching out incipient cases which is necessary for their recognition many times results in suspicion of tuberculosis in non-tuberculous individuals, and general practitioners can ill afford to run the risk of diagnosing tuberculosis in patients who are free from this disease.

I know that the fear of making this mistake has been the cause of disastrous delays in many instances. If physicians with special training in tuberculosis were given the task of detecting all the cases of incipient tuberculosis in the community within a reasonable time after the clinical onset, say, within two months, I believe that the number of tuberculin tests would be at least 20% of the number of incipient cases found.

As examples of puzzling cases doubtless more or less typical of those which appear to family physicians all over the country, I cite the following. Symptoms and signs relevant to the diagnosis which are not given were absent. Cases 3 and 4 were the only ones having hemorrhages. All cases having sputum were repeatedly examined and found negative. Koch's old tuberculin was used subcutaneously for testing. None of the cases failing to react to the test had a temperature over 99, and all reacting had a rise of 2° or more.

Case I. Female aged twenty-three. No history of infection. Slight cough and expectoration for three months. Loss of six pounds in weight, pleuritic pain in the right side. Maximum evening temperature 99.2 to 99.8. Few crackles and friction sounds in the right axilla. Reaction negative to 5 and 10 mgm. of tuberculin.

Case II. Female aged twenty-seven. Family history negative. Severe cough and slight expectoration beginning as a coryza one month previously. Slight soreness in right side. No loss of weight. Maximum temperature 99. Interrupted respiration and suspicion of fine râles at the fourth rib on right side. Reaction positive to 5 mgm. tuberculin. Pain and unmistakable râles over suspected area during fever reaction.

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* Read before the American Climatological Association in Boston, June 10, 1908.

Case III. Female aged twenty-six. Family history negative. Severe hemorrhage one year previously, patient claiming that the blood was neither coughed nor vomited. Loss of 12 pounds in weight. Slight cough with no expectoration for one month. Stomach symptoms suggestive of gastric ulcer. Maximum evening temperature 98.4. Examination of the lungs negative. No reaction to 2, 5 and 8 mgm. of tuberculin, the last dose being repeated.

Case IV. Female aged sixteen. One sister tuberculous. Slight cough and no expectoration. No loss of weight. Slight hemorrhage four days previously, at which time patient both coughed and vomited. The stomach symptoms suggestive of gastric ulcer. Maximum evening temperature 98.4. Few crackles at right apex. Positive reaction to 5 mgm. of tuberculin. Pain and increase of râles at the right apex during the reaction.

Case V. Male aged sixty-two. Family history negative. Severe cough and moderate expectoration for three months. Exposure to infection. Loss of 40 pounds in weight. Loss of appetite. Maximum evening temperature 98.4. Examination of the lungs negative. No reaction to 5 and 10 mgm. of tuberculin.

Case VI. Male aged twenty-eight. Family history negative. Slight cough and expectoration for four months. Slight pleuritic pain in left side. Maximum evening temperature 99.2. No loss of weight. Examination of the lungs negative. Reaction positive to 5 mgm. of tuberculin.

Case VII. Male aged twenty-five. Family history negative. Severe cough for one year. Scant expectoration, loss of 14 pounds in weight. Maximum evening temperature 99.6. Examination of the lungs: Questionable dullness at left apex. Uvula long. Reaction negative to 5 and 10 mgm. of tuberculin. Cough relieved by amputation of the uvula.

Case VIII. Male aged twenty-five. Three sisters died of tuberculosis. Slight cough, no expectoration. Loss of 3 pounds in weight. Maximum evening tempearture 98.6. Examination of the lungs: Questionable dullness at both apices. Reaction positive to 10 mgm. of tuberculin.

Of these 8 patients, 4 reacted and 4 did not react to the tuberculin test. The subsequent histories of 6 of these patients have been followed for periods averaging two years and have so far confirmed the diagnosis obtained by testing.

The degree of accuracy of the tuberculin test is largely determined by autopsy. Autopsies on persons who have been injected with tuberculin are rarely reported, and as the following cases serve to illustrate the limitations of the test, they are briefly recorded. These patients were given subcutaneous injections of tuberculin at the Danvers Insane Hospital by Dr. James D. Madison [7] in the years 1900, 1901 and 1902. The writer examined many of these patients at about the time of the test. There was no selection of cases because of suspected tuberculosis, all patients receiving the test unless their condition rendered it undesirable. The autopsies were performed by the hospital pathologists and members of the hospital staff, to whom I am indebted for these records. Unfortunately, no special effort was made to search for tuberculosis outside of the cranium, thorax and abdomen.

Case I. E. S. Female aged thirty-eight. Diagnosis of mental condition, primary dementia. Examination of the lungs showed wavy breathing and few râles at left apex. Positive reaction to 4 mgm. of tuberculin. Patient died one year and seven months after injection. Autopsy: Left pleural cavity contains about 10 oz. of fluid. Right lung is free. Pneumonia of both lungs. No evidence of tuberculosis in the lungs. No effort was made to determine the cause of the pleuritic infection.

Case II. N. G. Female aged thirty-one. Diagnosis of mental disease, general paralysis. Examination of the lungs: Cogwheel respiration over the left upper front. Reaction positive to 4 mgm. tuberculin. Patient died two years and two months after the test. Autopsy: Few adhesions of the pleura on each side. Left lung shows a small area of partial consolidation posteriorly with a little bronchitis and thrombus of a medium-sized vessel in the lower lobe. No evidence of tuberculosis in the lungs.

Case III. E. M. Female aged eighty-two. Diagnosis of mental condition, senile dementia. Examination of the lungs negative. Reaction positive to 10 mgm. of tuberculin. Patient died six years and six months after the test. Autopsy: The right lung was gangrenous and the right pleural cavity contained about 300 cc. of reddish-brown purulent fluid having an offensive odor. There was an area of commencing abscess formation around the right kidney. No evidence of tuberculosis found in the thorax or abdomen.

Case IV. M. S. Female aged sixty-four. Diagnosis of mental condition, post-paralytic dementia. Examination of the lungs negative. A positive reaction to 4 mgm. of tuberculin. Patient died twelve months later. Autopsy: The left lung was adherent to the chest wall by numerous adhesions easily broken up. There was a large contracted area deeply pigmented at the left apex. No sections of this scar tissue were made.

Case V. M. H. Female aged sixty-four. Diagnosis of mental condition, primary dementia. Examination of the lungs: A few fine crackles at both bases. Reaction positive to 4 mgm. of tuberculin. Patient died in two years and five months after injection. Autopsy: In the left pleura are numerous old fibrous adhesions. The visceral pleura is much thickened. There is an old scar at the left apex and a rather large scar about the middle of the upper lobe.

Case VI. A. D. Female aged forty. Diagnosis of mental condition, chronic delusional insanity. Examination of the lungs: Prolonged expiration at the right apex. Reaction positive to 4 mgm. Patient died two years and ten months after the test. Autopsy: A few old fibrous adhesions in the right pleura and a small edematous patch in the right pleura at the apex. Right apex shows a small cavity 3 cm. across, containing foul greenish detritus. Pneumonia of the upper lobe of the right lung; gray hepatization. Pneumonia of left lung. Sections of the walls of this cavity did not show evidence of tuberculosis.

Case VII. M. E. Female aged fifty-three. Diagnosis of mental condition, organic dementia. Examination of the lungs: Nothing of importance found; reaction positive to 4 mgm. of tuberculin. Patient died two years and five months after the test. Autopsy: Both lungs normal save slight hypostatic congestion. Peribronchial lymph node enlarged to 3 cm. by 2 cm. contains many caseous foci in which a few giant cells are found. Sarcoma of the brain.

Case VIII. A. B. Female aged fifty. Diagnosis of mental condition, primary dementia. Examination of the lungs negative. A positive reaction to 6 mgm. Patient died twelve months later. Autopsy: Right pleura free. Left pleura adherent over entire lung. In the upper lobe of the left lung a small area was found studded with miliary tubercles.

Case IX. J. C. Female aged fifty-seven. Diagnosis of mental condition, imbecile. Examination of the lungs: "Signs of emphysema." Reaction negative to 4 and 7 mgm. of tuberculin. Patient died seven years after the test. Autopsy: Each lung is bound down by a slight adhesion near the apex. Slight edema of the bases. A calcified nodule at the apex. No other signs of tuberculosis.

Case X. S. G. Female aged sixty. Diagnosis of mental condition, post-paralytic dementia. Examination of the lungs showed a few fine râles scattered over the chest. Four and 7 mgm. of tuberculin given. Reaction negative. Autopsy: Old firm adhesions at left apex. Left apex has an old fibrous puckering. Right lung has similar adhesions at the apex and the lower lobe shows a moderate degree of edema. Mesenteric glands not enlarged.

Case XI. I. V. Female aged sixty-seven. Diagnosis of mental condition, alcoholic dementia. Examination of the lungs: Moist râles over both bases. Reaction negative to 4 and 7 mgm. of tuberculin. Patient died a few months after the test. Autopsy: Right pleural sac contains 500 ccm. fluid. Left pleura adherent over nearly entire surface. Lungs collapsed. No consolidation. Hydropericardium. Left ventricle hypertrophied, aortic and mitral valves somewhat thickened, but not rigid; weight 417 gm.

Case XII. A. K. Female aged sixty-two. Diagnosis of mental condition, recurrent insanity. Examination of the lungs negative. Reaction negative to 4 and 7 mgm. of tuberculin. Patient died four years and eleven months after the test. Autopsy: Apices free from adhesion and cicatrices. Some adhesions of the right pleura. Bronchial lymph nodes normal. Bronchopneumonia of the lower and posterior parts of both lungs. No signs of destructive lesions.

Case XIII. D. G. Female aged seventy-seven. Diagnosis of mental condition, senile dementia. Examination of the lungs: Crepitant râles heard over the lower lobes of both lungs. Reaction negative to 4 mgm. of tuberculin. Patient died three years after the test. Autopsy: Lungs, hypostatic congestion and a few tiny areas of pneumonia. Peribronchial lymph nodes and larger bronchi normal. Lymphatics normal. No evidence of tuberculosis found.

Case XIV. A. M. Female aged forty-three. Diagnosis of mental condition, general paralysis. Examination of the lungs: Nothing of importance. Reaction negative to 4 and 7 mgm. of tuberculin. Patient died two years and one month after the test. Autopsy: Acute bronchitis with slight bronchopneumonia of left lung. Lymphatic system apparently normal. No evidence of tuberculosis found.

Of the 8 cases giving positive reactions, Cases IV, V and VIII showed either active or healed tuberculosis in the lungs. Case VII showed a tuberculous peribronchial lymph node; Cases II and VI had old pleuritic adhesions but no other sign of tuberculosis in the thorax. Case I had a pleuritic effusion in conjunction with double pneumonia, the presumption being against the pleuritic lesion being tuberculous. In Case III the pleuritic lesion apparently was a secondary infection from gangrenous lung. This case well illustrates the fact that if the tuberculin test be given to persons having no signs or symptoms of pulmonary tuberculosis in some of those reacting positively no evidence of tuberculosis in the thorax or abdomen will be found. Persons who have no signs or symptoms of tuberculosis should not be given the test as it is not only of no clinical value but it confuses the physician and unnecessarily alarms the patient.

Of the 6 cases giving negative reactions 2 had healed lesions at the apices, 2 had pleuritic adhesions without evidence of tuberculosis in the lungs and 2 showed no evidence of tuberculosis in either pleura or lungs. In the cases reacting positively in which tuberculous lesions were found the possibility that the infection occurred after the test cannot be absolutely excluded, but from the character of the lesions it is most unlikely.

In the cases giving negative reactions in which no tuberculosis was found, the autopsies were not sufficiently complete to exclude the possibility of tuberculosis in the lymph nodes, nasal passages, middle ears and organs outside of the cranium, thorax and abdomen, where tuberculosis occasionally occurs. Cases IX and X show that healed tuberculous lesions may not react to doses of 4 and 7 mgm. of tuberculin. Possibly they would have reacted had Koch's[1] injunction to give 10 mgm. twice been followed.

Some observers have claimed that diseases other than tuberculosis, notably syphilis [8, 9] and influenza,[10] give positive reactions, but these claims are not substantiated by autopsies showing the absence of tuberculosis in these cases.

That a positive reaction to the tuberculin test judiciously given proves the presence of tuberculosis somewhere in the body in the overwhelming majority of cases is supported by evidence too strong to be overthrown by the unusual results of a few observers.

The following is an example of the numerous proofs of the accuracy of the tuberculin test as applied to cattle. "In the work of the Pennsylvania State Live Stock Sanitary Board,[11] covering about 4,400 post-mortem examinations of reacting cattle, the lesions of tuberculosis have been found in all but 8 animals that have reacted in a way that was deemed characteristic. We are not, however, justified in saying that tubercular lesions did not exist in these animals, because every portion of the carcass could not be examined. It can only be said that they were not found."

The well-established fact that some patients with healed lesions and other patients with advanced disease fail to react does not count against the practical value of the test, as it is not needed in these cases.

In a series of doubtful cases in which the tuberculin test is given, in some patients negative reactions will indicate the absence of active tuberculous lesions beyond a reasonable doubt. In a considerable proportion of the suspected patients giving positive reactions, local reactions in the lungs will remove all doubt. I have found local reactions in the lung in 20% of patients who reacted positively. Hamman and Wolman [12] also report local reactions in 20% of patients who reacted positively.

In patients having healed pulmonary lesions or lesions outside the lung in addition to influenza or some other non-tuberculous infection of the respiratory tract, a tuberculin reaction may be misleading. But it should be borne in mind that we have no method of diagnosis which may not in some cases be misleading. In patients critically ill with non-tuberculous pneumonia in addition to pulmonary tuberculosis, the finding of tubercle bacilli in the sputum may be misleading. Such cases have been reported by Janeway,[13] and I have seen cases of this kind.

The practical value of the tuberculin test in suspected cases is shown by Meyer,[14] who found tubercle bacilli in the sputum of 18 out of 28 doubtful cases some time after positive reactions had been obtained. Of 29 suspected cases giving positive reactions when tested by France,[15] all showed active tuberculous lesions at autopsy, and in 5 suspected cases giving negative reactions no tuberculous lesions were found at autopsy.

The dangers attending the subcutaneous injection of tuberculin deserve careful consideration. Madison quotes Ewald [16] as reporting 2 deaths from hemoptysis. One case received 1 mgm. and a second case several injections up to 10 mgm. Heron [17] reported a case in which death occurred twenty-seven hours after the injection of ⅓ mgm., but as the patient did not react he thinks tuberculin was not the cause of death. Brown [18] reports 10 hemorrhages occurring after the injection of tuberculin therapeutically, which may quite possibly have been coincidences.

A search of the literature shows that reports of cases in which death or permanent harm have followed the injection of tuberculin for diagnostic purposes are extremely rare. There could be no certainty that many unfavorable cases had not been reported, and in order to collect evidence on this point, and to obtain information from a large number of observers using tuberculin for diagnostic purposes in pulmonary tuberculosis, letters were sent to the superintendents and physicians in charge of 500 hospitals, comprising all general hospitals of over 75 beds in the United States, making inquiries as to whether or not the tuberculin test had been given, by what method, if any, and asking for a statement of bad results.

In three replies were statements that "rather severe reactions" had been experienced, and one case of swollen arm was reported, but as no serious symptoms or permanent harm resulted these could hardly be classed as bad results. One physican had seen "one or two cases out of a great number where symptoms were exaggerated after the test, but he was not sure they were due to tuberculin." One physician has seen bad results in 2 cases in which overdoses had been given by mistake, but this could not properly be charged to tuberculin. Of 60 replies received from hospitals in which the subcutaneous method had been used, 57, or 95%, had experienced no unfavorable results. Three, or 5%, reported the bad results given below.

Case I. A case of Addison's disease died fifty hours after one subcutaneous injection of 7½ mgm. of tuberculin. The patient had been "very sick" some time before the injection, but patient's temperature had never been over 100 and was normal at the time of the injection. Temperature reaction over 105.

Case II. A case of Addison's disease died forty-eight hours after a subcutaneous injection of 10 mgm. of tuberculin. This case was very feeble at the time of the injection.

Case III. A case of pneumonia of the right upper lobe which did not entirely clear up in three weeks. The injection of $\frac{1}{30}$ mgm. of old tuberculin gave no reaction and one week later $\frac{1}{30}$ mgm. was given. Temperature reaction 104 and death in eight weeks. Autopsy showed miliary tuberculosis of the lungs, intestines, right kidney and commencing tuberculosis of the meninges.

Case I and II have been elsewhere reported in the literature.[19,20] They illustrate the risk of giving initial doses above 2 mgm. Had Koch's [1] injunction to begin with $\frac{1}{10}$ mgm. in feeble patients been followed these two unfortunate results might quite possibly have been avoided. Hawes and Floyd quote Ross, of Toronto, as having had fatal results in 2 cases of Addison's disease. In view of these experiences tuberculin should be given in Addison's disease only with extreme caution if at all. That there is reason for suspecting that the unfavorable outcome in Case III was due to the tuberculin may be readily granted. It must also be conceded that inasmuch as cases of acute miliary tuberculosis are frequently developing among tuberculous patients to whom it is not given, tuberculin may sometimes be held responsible for the development of conditions which were inevitable at the time of its administration. Frazier and Biggs [21] report a case whose temperature was taken a few days in preparation for the tuberculin test who developed paraplegia the day before the injection was to have been given. One patient to whom I decided not to administer tuberculin therapeutically, died of hemorrhage two days after he would have received the dose had I decided differently. It is comparatively easy to collect thousands of cases tested by different observers without injury except for the temporary illness which constitutes the reaction. Tinker,[22] Wood,[23] Dunham,[5] White,[24] Rolpke,[25] Sears,[26] Otis,[8] Hawes and Floyd [20] have altogether reported 1,200 tests without bad results in any case. Koch [1] reported 3,000 diagnostic injections in which he "had never seen any disadvantageous effects of tuberculin when it was used in the way I have described."

Hundreds of thousands of cattle are tested yearly without injury to animals being reported. In Denmark, where tuberculous cattle are segregated and kept, Bang [27] states that several herds, comprising many hundreds of cattle, were still living two to four years after reacting positively, and that generalized tuberculosis did not develop more frequently among these tested cattle than among others.

Of 397 patients who were given subcutaneous njections by Madison [7] at the Danvers Insane Hospital, which I traced for periods varying from several months to eight years, no patient developed general tuberculosis. Of 50 patients tested by the subcutaneous methods at the Rhode Island Sanatorium no ill effects have resulted with the exception of a swolled arm in one patient who refused to be injected in the back.

The dangers which should be kept constantly in mind in giving tuberculin as noted by many observers are:

1. The temptation to give a large initial dose in order to lessen the number of injections in a given case. Patients in poor condition should not be given over $\frac{1}{10}$ mgm. at the first injection. Patients in good general condition with maximum temperature under 99° F. may be given 1 or 2 mgm.

2. The administration of an initial dose of tuberculin when the temperature is above 99° F.

3. Carelessness in not considering a rise of a fraction of a degree or more Fahrenheit after the first injection and not regulating the size of the second dose accordingly. If such rise occurs the same dose should be repeated and not increased. I have known of alarming reactions and unwarranted prejudice against tuberculin to result from a violation of this rule.

4. In addition to the overdoses given by mistake reported above, I have known of one other case in which an overdose was given because of a mistake in preparing the solution. This work should be done by a reliable pharmacist rather than the practitioner or hospital interne.

The replies from 225 hospitals received in response to circular letters above referred to showed that 51, or 22.6%, claimed not to admit cases of pulmonary tuberculosis, and 84, or 37.3%, did not use the tuberculin test in any form. Ninety hospitals, or 40%, used the tuberculin test. Of 60 hospitals using the subcutaneous method, 12 were using it in out-patient departments. Of 74 hospitals using the ophthalmo-tuberculin test, 23 were using it in the out-patient departments. Of 32 hospitals using Von Pirquet's cutaneous reaction, 7 were using it in the out-patient departments.

It may well be doubted whether any hospital of 75 beds or over can escape admitting cases of incipient tuberculosis who are treated for other diseases which cause more immediate suffering.

Tuberculous patients are prone to disregard the slight symptoms of early tuberculosis. Of 505 cases admitted to the Rhode Island Sanatorium, 219, or 43.3%, delayed consulting physicians for their lung symptoms for a period averaging 6.4 months, and some of these patients had in the meantime been under treatment for other diseases in general hospitals.

General hospitals which attempt to exclude pulmonary tuberculosis can render valuable assistance to the anti-tuberculosis movement by diagnosing these early cases by means of tuberculin when necessary and thus set a standard for the early diagnosis of tuberculosis in the communities in which they are located.

The simplicity of application and absence of constitutional symptoms attending the ophthalmo-tuberculin test and Von Pirquet's cutaneous test are obvious advantages. Should they prove as accurate and as safe as the subcutaneous method, the use of the latter will doubtless become infrequent. I have seen too few cases to express an opinion as to their accuracy, especially as I have seen no autopsies. In 2 of my suspected cases which were entirely negative to the ophthalmo-tuberculin test, typical tuberculin reactions followed the subcutaneous injection of 5 mgm. One of these cases also showed a decided cutaneous reaction. One case which failed to react to the cutaneous test* also reacted positively to 5 mgm. by subcutaneous injection.

It will take years for the accuracy and safety of the cutaneous and ophthalmic tests to be as sufficiently verified by autopsies and clinical work as is the subcutaneous test to-day, and in the meantime suspected cases giving negative reactions to these tests should subsequently be given the subcutaneous test unless the general condition of the patient or an inability to record his temperature prevent the application of the last-named method.

The local reactions in the lung which frequently follow the subcutaneous injection give this method a distinct advantage in accuracy over its rivals.

The circular letters from the hospitals above referred to showed that of 74 hospitals using the ophthalmo-tuberculin test 61, or 85%, had experienced no bad results.

One physician reported: "In my own case recently a postponed ophthalmic test might have been confused by an infection of pink eye that would otherwise have given me a bad scare with no means of proving an error." From this case it would seem that the ophthalmo-tuberculin reaction is of doubtful value during epidemics of pink eye.

Thirteen hospitals reported the unfavorable results given below:

Five, "Severe reactions."

One, "One case suppurative conjunctivitis due possibly to previous chronic conjunctivitis."

One, "Two cases of severe conjunctivitis."

Three, Conjunctivitis lasting several weeks.

Three, Ulceration of the cornea.

Six of these eleven hospitals reported that no history of previous disease of the conjunctiva or cornea could be obtained in the unfavorable cases. This included 2 of the cases of corneal ulceration. These bad results from the ophthalmic test show that great caution is required in the selection of cases for this method and that great care should be exercised in the technic. Patients who have conjunctivitis or who have ever had disease of the iris or cornea should not be given this test. For patients in hospital wards, or for patients whose temperatures can be watched in their homes, the subcutaneous test is much to be preferred. One hospital reported several severe reactions from the cutaneous test.

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* A 25% solution of old tuberculin was used.

In order to ascertain the extent to which medical students are being taught the needs of the tuberculin test and its practical application, circular letters were sent to all the medical colleges in the United States asking the following questions:

1. Are your students taught that pulmonary tuberculosis may occasionally be present when no signs of the disease can be detected on physical examination by an expert?

2. Are your students taught that if there is continued doubt as to the presence or absence of pulmonary tuberculosis after careful study of a case, that the tuberculin test should be resorted to?

3. Is the tuberculin reaction (by subcutaneous injection) in doubtful cases of pulmonary tuberculosis demonstrated to your students?

4. Is Calmette's ophthalmo-tuberculin test demonstrated to your students?

5. Is Von Pirquet's tuberculin skin reaction demonstrated to your students?

Eighty-one replies were received from medical colleges in 26 states. Of these, 78, or 96.1%, answered the first question in the affirmative. Seventy-one, or 87.6%, advised their students to resort to the tuberculin test in case there was "continued doubt," etc., and 10, or 12.3%, did not advise its use. Sixty-two, or 76.5%, demonstrated the tuberculin test in some form. Fifty-one, or 62.9%, gave demonstrations of the test by subcutaneous injection, and 29, or 37%, did not do so. Fifty-seven medical colleges, or 70.3%, were demonstrating the ophthalmo-tuberculin test to their students and 30, or 37%, were demonstrating the cutaneous reaction.

One prominent university answered, "Yes, but not sufficiently," to all five questions; another prominent university answered that the demonstrations were given in sections and that some students might not see them. Many regretted that it was not more thoroughly done. One reply stated that the test was unsafe, and another that sputum examinations were sufficient for diagnosis.

Medical colleges should make special efforts not only to have their students trained in physical diagnosis, but to have them impressed with the fact that in spite of all the training in physical diagnosis thus far given, and all the agitation concerning tuberculosis during the past ten years, a comparatively small proportion of tuberculous patients are diagnosed in the incipient stage of the disease. If our medical students are not thoroughly trained in the use of a diagnostic agent found necessary in the detection of doubtful case by Koch,[1] Turban,[25] Heron,[17] Trudeau,[29] Osler[30] and a host of careful clinicians, it must be expected that a large proportion of these doubtful cases which develop sooner or later in every community will continue to drift into the advanced stages before a positive diagnosis is made.

SUMMARY.

1. The tuberculin test is at present necessary for the prompt diagnosis of many suspected cases of pulmonary tuberculosis.

2. Of 8 cases reacting positively, in which the subcutaneous test was given as a routine without reference to symptoms of tuberculosis, at least one had no tuberculosis in the thorax or abdomen.

3. Of 6 patients reacting negatively to 4 and 7 mgm., 2 had healed lesions in the lungs.

4. The tuberculin test should be given only to patients who have symptoms or signs of tuberculosis. If given to other persons a positive reaction has no clinical value because of the uncertainty as to the location of the lesions and the probability of healed lesions reacting.

5. In the great majority of doubtful cases of pulmonary tuberculosis the subcutaneous test will give a correct diagnosis.

6. If given judiciously in small initial doses the subcutaneous test is safe; it should be given in Addison's disease with extreme caution or not at all.

7. Of 225 hospitals in the United States having 75 beds or over, 40% have used tuberculin in the diagnosis of pulmonary tuberculosis, 26.6% have used the subcutaneous method, 32.8% have used the ophthalmic method, 14.2% have used the cutaneous method.

8. The accuracy of the ophthalmic and cutaneous tuberculin tests is yet to be proven and cases reacting negatively to these tests should be tested by the subcutaneous method, unless the last-named method is contra-indicated. Cases suitable for the subcutaneous test should receive it in preference to the ophthalmic test because of its greater safety.

9. Of 81 medical colleges in the United States, 87.6% advise that the tuberculin test be given as a last resort in suspected cases of pulmonary tuberculosis, 76.5% have demonstrated the tuberculin test to their students, 62.9% have demonstrated the test by subcutaneous injection, 70.3% have demonstrated the ophthalmic test, 37% have demonstrated the cutaneous test.

10. All medical students should be thoroughly trained in the use of the three methods of applying the tuberculin test.

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[26] Boston Med. and Surg. Jour., Aug. 5, 1897, p. 121.
[27] Bull. No. 75 of the Penn. Dept. of Agriculture, p. 253.
[28] The Diagnosis of Early Tuberculosis of the Lung, p. 36–38.
[29] Med. News, N. Y., May 29, 1897.
[30] Trans. Brit. Congress on Tuberculosis, vol. iii, p. 96.

THE GROWTH AND DEVELOPMENT OF SURGERY IN THE SMALLER CITIES.*

BY CHARLES H. RICHARDSON, M.D., PITTSFIELD, MASS.

No doubt many of the gentlemen present will recall the days when surgery was done entirely by men residing in the larger cities. There were even then very few men who confined their activities to surgery alone, for there was comparatively small demand for their services. The general practitioners of those days were *afraid* of surgery, and a surgeon was seldom called in except as a last resort, and then in the majority of cases only after the favorable time for cure by operation had passed.

Then again, in such emergency cases, it was no uncommon thing for a surgeon to be summoned from some city perhaps a hundred miles distant, and oftentimes half a day or more would elapse before the operator would reach his patient. The results of such methods were of necessity none too good, but the fault did not necessarily lie with the surgeon.

At a later period, when asepsis was better developed, and the medical profession became better grounded in bacteriology and pathology, there was more demand for the surgeon. The more favorable termination of operative cases had its influence; the education of the people to the fact that calling a surgeon did not always mean death helped immeasurably, and the physician became more alert in distinguishing operative cases from non-operative. Men begun to devote their activities to surgery and, even at this early date, some took it up as an exclusive line of work, and from that time surgery started on its progressive march, until to-day good surgery is by no means confined to the larger cities, nor are all the best surgeons located in such cities.

It is, however, only within the last ten or twelve years that modern, up-to-date surgery, as is carried on in the larger cities, has been duplicated in the smaller ones, and even in large towns of twelve or fifteen thousand population. In fact, the development of so-called " country surgery " is so recent that, I think, it is safe to say that many of the men in New York, Chicago, Boston and such cities little realize that in the smaller places modern surgery is done, and every detail of operating-room technic thoroughly carried out. The results, as are shown by the various papers, articles and reports from practitioners in smaller places, would indicate that their mortality is at least in some places as low as in the large metropolitan hospitals. Modern surgery then to-day is carried practically to the door of every one, and this evolution in the art has been brought about by three factors mainly.

First: Men who have located in the smaller cities, and have established good reputations as general practitioners, take up surgery to a greater or lesser degree, and get the support of their brother practitioners in surgical work. As their work increases in this line they gradually perfect themselves in technic by visiting the clinics and taking post-graduate courses, and in time many of them drop general practice entirely and devote all their time and attention to surgery alone. Some of our best surgeons of to-day are men who have done this very thing.

Second: A certain number of bright, clear-headed young men of to-day, who are gifted with enough foresight to look into the future, discover the fact that in order to become a full-fledged surgeons, and command the respect of their brother practitioners and of the public, and to be able to meet with competition from the man who has " worked himself into it," they must be thoroughly grounded to do the work and must have an education greater than that which one gets from a medical college or from one or two years' interneship in a hospital. These men, then, are, after they complete their hospital course, associating themselves with surgeons of recognized standing as assistants. After a period of two or three years " apprenticeship " they launch out for themselves and do nothing but surgery for the start. These are the men who are gradually locating around in the smaller cities. They have been educated and trained in the details of asepsis and modern surgical technic. They practise surgery alone and do not enter into competition with their brother medical practitioners.

They, therefore, get the support of the profession in their own neighborhood, and in time also that from a large surrounding community, and become successful men in their line of work.

Third: The growth and development of major surgery cannot be intelligently discussed without including the growth and development of the hospital as well. The hospital is almost a necessity to the man who does any amount of surgery. There are very few cities of twenty-five thousand population to-day, particularly if the center of any surrounding country, which do not have a public or a private hospital. These younger men, with their modern training, when going to the smaller places, are usually welcomed on the board of the local hospital, and their advanced methods are more or less adopted, and thus the small city hospital duplicates in detail, in a sense, the larger one.

In a recent address Dr. Maurice Richardson, of Boston, points out the error so commonly made in the smaller city hospital of putting a great number of men on the staff and giving them equal encouragement to do the surgery that occurs in the hospital during their time as attending physicians or surgeons. As he says, " There are seldom more than one or two men in a comparatively small city who are competent to do major surgery." He indicates that the hospital would be much more successful if the support of the governing board and its physicians was given to the men who are by education and training best fitted to do the work, and that the hospitals would attain something more than a comparatively small local reputation.

I personally believe that a man who does not give the time necessary to thoroughly fit himself to do surgical work would be, in the majority of cases, far better off if he never attempted it. No better proof of this could exist than the fact that usually men who have the greatest reputation as physicians in every locality are those who do no surgery at all, except now and then an emergency case. By so doing the physician has the implicit confidence of his patients that in the event an operation is needed he will do everything in his power to secure a competent man to do it and not try it himself.

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* Read before The Massachusetts Medical Society, June 10, 1908.

There can be no doubt that the control of a hospital has much to do with the success of a surgical practice. The establishment of private hospitals is becoming more and more frequent, and upon investigation I find that some of the most successful places in the country are private institutions which are conducted by a single man or a group of men associating themselves together and thereby being able to control the policy of the institution. They are usually successful for the reason that the men associated with them make them so. It is the *man who makes the institution* and not the *institution that makes the man.*

No better example of this can be had than that of the St. Mary's Hospital in Rochester, Minn. There is probably more surgery done in this hospital than in any other hospital in the United States, but it is all done by the Mayo brothers and their assistants. It is probable that nine out of every ten patients that go there do not know the name of the hospital — whether it is public or private; sectarian or non-sectarian. Furthermore, they do not care. They go there to obtain the benefit of the art of surgery at the hands of either of the Mayo brothers, and the hospital is a secondary consideration.

This, then, is the reason that private hospitals are being established throughout the country by men who have a local reputation, and thus hospitals are managed by the men who come in contact with the patients, and know what they want and what they ought to have. It is given to them, and the results are that private hospitals throughout the country are becoming very popular.

DISCUSSION.

DR. H. G. STETSON, of Greenfield: I think we are indebted to Dr. Richardson because we in the country, at least, think good surgery can be done in the small places. As he says, it has its advantages and disadvantages. In the small towns you do get good operators, but with a little bit of a disposition to run to the extreme; and as he says, the younger men feel that they can do operating even if they have not had the proper training to begin with. I believe that ultimately this will reach its level; that the man who can do the work and do it successfully will do it, or a larger part of it, and the public will come to see that the experienced man is the one to go to, and not the family physician.

As he says also, in regard to the smaller hospitals and the men that are connected with them, — it is the man that makes the hospital and not the hospital that makes the man. A hospital is successful if it has a good working staff, if it has men connected with it who are capable of doing good work, both medical and surgical, and who command the confidence and respect of the physicians in the community in which it is situated.

The country surgeon in some ways has the disadvantage of his city brother in that he is called upon many times to operate upon patients who are *in extremis* — patients who have been allowed to go on longer than his brother in the city allows them to go on. They are more distant from the hospital, it is very difficult to transport them, and in consequence, by the time the surgeon sees them, they are not in as good shape to operate upon as oftentimes they are in the city, and for that reason I believe that the city man, from the nature of his work, is able to do better work than the man in the country.

And again, I believe that, all things considered, in many communities in the state of Massachusetts (and for that matter, all over the country), there is excellent surgery done in the small country hospitals. And I should most heartily commend the statement he makes, that a man should not do general surgery unless he has some peculiar fitting qualities, and unless he has had some experience; and every man should not feel that he can remove an appendix, simply because he has seen some one else do it.

The country surgeon, the surgeon in the smaller communities, has come to stay. Whether at some future time every small community will have its one or two men who do surgery alone, I am unable to say. I am inclined to think that will be so; in communities of 8,000 or 10,000 people some one man will give up general practice and do surgery alone, and it is going to be for the benefit of surgery.

OMENTOPEXY TO THE INTESTINE DEPRIVED OF ITS MESENTERY.

BY CHARLES L. SCUDDER, M.D., BOSTON.

(*From the Laboratory of Surgical Research, Harvard Medical School.*)

IT is common knowledge among surgeons that the human intestine cannot be deprived of its mesentery without danger of damage to the intestine.

Litten[1] demonstrated that ligation of the superior mesenteric artery caused necrosis of the intestine.

Madelung[2] demonstrated that in dogs and rabbits the intestine deprived of 8, 10 or 15 cm. of mesentery underwent necrosis.

Rydyjier, Tansini and Zesas confirmed these experiments of Madelung and also demonstrated that dividing the mesentery close to the intestine was more dangerous to the integrity of the gut than dividing it some distance away from its attachment to the intestine.

Bier[3] demonstrated that in rabbits only from 3 to 5 cm. of the intestine could be deprived of its mesentery without undergoing necrosis.

Lanz[4] experimented upon two dogs. Dog 1 lived some time after 50 cm. of intestine had been deprived of mesentery at three different operations, one month apart. The omentum was placed about the gut at the first operation and attached to its mesenteric border at the two subsequent operations. At autopsy the gut was functionally active and anatomically intact. The second dog died, after 50 cm. of intestine had been deprived of its mesentery, of a purulent peritonitis.

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[1] Virchow's Arch., Bd. lxiii.

[2] Arch. für klin. Chir., Bd. xxvii, Hft. 2.

[3] Virchow's Arch., Bd. cxlvii, Hft. 3.

[4] Zentralbl. für Chir., June 1, 1908.

Lanz [4] has employed omentopexy in one operation upon the human subject, in which, after having removed a cancer of the stomach, he attached the omentum to the transverse colon, which had been deprived of its mesentery. The patient recovered.

I have undertaken experiments upon four dogs simply to note the behavior of the bowel after it has been shorn of its mesentery and the omentum has been used to take the place of the mesenteric blood supply. As a result of the work by other investigators and my own series of experiments, I am inclined to regard this procedure of omentopexy to the gut deprived of its mesentery as of very limited usefulness in human intestinal surgery. Resection and anastomosis of the bowel is, of course, the procedure best adapted to the conditions following a removal, accidental or intentional, of the mesentery from the bowel. It is conceivable that an omentopexy might prevent necrosis of the bowel if a limited portion of intestine (2 or 3 cm.) were deprived of its mesentery. The value of an omentopexy to the bowel would be increased if a plastic of omentum were made to either side of the denuded area.

Experiments were made upon four dogs to determine the result of detaching the mesentery from a measured length of gut and replacing the detached mesentery by omentum.

Experiment No. 1. Dog No. 1. Nov. 27, 1907. Six centimeters of intestine were freed of mesentery. The mesenteric vessels were ligated at some distance from the intestine. The gut became slightly dusky. The border of the omentum was refreshed and sutured to the ligated mesenteric attachment.

Dec. 30, 1907. The site of the previous omentopexy showed firm union between the omentum and bowel. There was no apparent change in the gut. Ten centimeters more of gut contiguous to the seat of the previous operation were freed of its mesentery. The intestine supplied by this mesentery became a dusky blue. The free denuded border of the omentum was sutured to the mesenteric attachment over these 10 cm.

Jan. 23, 1908. The intestine was found normal in appearance and behavior. The omentum was firmly attached to and evidently nourishing the bowel at the place of the first and last suture. The animal was killed.

Experiment No. 2. Dog No. 2. Nov. 29, 1907. Five centimeters of intestine were freed of mesentery. The vessels were ligated close to the bowel. The gut became very dusky. The free border of the omentum was refreshed and sutured to the free gut at the mesenteric attachment.

Dec. 30, 1907. The intestine at the seat of operation was intact. All the intestine denuded of mesentery and the omentum were adherent. Ten centimeters more of contiguous bowel were denuded of its mesentery. The intestine was pale and blue, somewhat contracted. Omentopexy done.

Jan. 1, 1908. The dog died. Autopsy: Intestinal gangrene; bloody fluid was in the peritoneal cavity.

Experiment No. 3. Dog No. 3. Nov. 29, 1907. Five centimeters of intestine freed of mesentery. Vessels ligated close to the intestine. Gut dusky in color, but less dusky than in dog No. 2. Omentum refreshed and sutured to denuded gut.

Dec. 30, 1907. Appearance normal, the omentum having united to the mesenteric attachment of the denuded gut. Fifteen centimeters more of the gut were denuded and the omentum attached. The mesentery in this case was ligated far away from the gut rather than close to it.

Jan. 18. All the parts in a normal condition, the omentum having healed as sutured to the denuded gut.

Experiment No. 4. Dog No. 4. Nov. 30, 1907. Eight centimeters of intestine freed of its mesentery close to the gut. The gut was dusky in color as in Experiment No. 2, but the duskiness extended over a larger area. The omentum was denuded and sutured to the mesenteric attachment of the gut.

Dec. 30, 1907. Many adhesions of the omentum found to the denuded gut. The sutured omentum had healed. There was a hard mass in the intestine at the seat of the denudation, the gut was resected and an end-to-end anastomosis done with the Connell suture.

Jan. 5, 1908. This dog died of pneumonia. The abdomen was perfectly clean, the intestinal suture intact. At the examination of the mass removed, was found a large piece of bone impacted in the intestine which had been denuded of mesentery.

These experiments demonstrate that in the dog, if the vessels in the mesentery are tied far from the mesenteric attachment, the gut remains viable even when considerable mesentery is detached. The nearer to the gut the ligation is made of the mesenteric vessels, the less detachment of mesentery can be made and viable gut remain. From 16 to 20 centimeters of gut may be denuded with subsequent omentopexy safely. Ten centimeters may be denuded with omentopexy, with gangrene. In the instances which recovered, after two denudations and two omentopexies, the gut at the seat of operation was slightly smaller in size and a little thicker from edema.

Clinical Department.

REPORT OF A CASE OF PRIMARY CARCINOMA OF THE APPENDIX WITH A STATEMENT OF THE LITERATURE.*

BY C. O. KEPLER, M.D., BOSTON.

H. F. B., American born. Forty-three years of age. Occupation, housewife.

Family history. — Unimportant until six years ago, when the patient, who has always been irregular since the beginning of her catamenia at sixteen, this irregularity varying from three weeks to three months, began to have a foul leucorrheal discharge, associated with almost constant flowings, usually scant, but occasionally very profuse. After three months of this condition patient was operated upon at the Worcester City Hospital, Jan. 27, 1902, by Dr. Lemuel Woodward, who is said to have removed a fibroid tumor. Patient says she was relieved of her symptoms after the operation. Patient has been married twenty-three years and has never conceived.

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* Read at the meeting of the Obstetrical Society of Boston, April 28, 1908.

Patient says that about ten weeks after her fibroid operation she had an abscess in the region of the right tube and ovary, for which she refused operation, and which finally emptied itself per rectum.

Patient says that for about a year before she was seen by the writer she began to have a pain in her lower back, sometimes more on the right side; afterward it began to be a steady ache, the pain going down her legs, especially the right one. She was under treatment by her physician for a time, spent a week in bed and then gradually got better.

In November, 1907, patient was first taken with attacks of vomiting and pain in the right iliac region, associated with tenderness on pressure. She is not sure about constipation or that she had fever. After several days in bed she was, apparently, recovered.

In May, 1907, patient had another attack with the same symptoms only more severe, and from this time on patient began to have frequent attacks of nausea and a constant feeling of slight tenderness, with a desire to shield her right side.

Present illness. — On the night of Aug. 27, 1907, patient went to bed apparently well but was wakened up in the middle of the night by severe pains over the region of the appendix, accompanied by persistent vomiting. Aug. 29, 1907, the patient was seen by the writer in consultation with Dr. C. F. Berry, her physician, who found that the patient was suffering from very severe spasmodic pains in her appendiceal region, these attacks lasting from a few seconds to several minutes, of frequent onset and always associated with nausea and usually with vomiting. There was also decided constipation and loss of appetite.

Physical examination. — Showed a well-developed and well-nourished woman. No loss of weight noted. Tongue coated. Mucus membranes slightly pale. Lungs negative. Heart organically negatvie, beat somewhat weak. The abdomen was negative except for great tenderness over McBurney's point and decided muscular spasm. There was also moderate distension. Pulse 90. Temperature 99°.

A diagnosis of acute appendicitis was made and operation at once advised. This was refused by the patient.

Aug. 31, 1907, two days after the first visit, the writer again saw the patient in consultation with Dr. Berry. At this visit it was found that the patient's symptoms were all more aggravated, the pain in the right iliac region having become almost continuous and excruciating in character; the vomiting was well nigh intractable. The patient was not able to bear the weight of an ice bag, and even the weight of the bed clothes seemed to aggravate the pain. There was no movement of the bowels without enemata and these caused the patient tortures. At this time temperature was 99.4°. Pulse 116 and decidedly weak.

The diagnosis of acute appendicitis was again made; immediate operation advised and accepted. The operation was performed about three hours later, at which time a moderately swollen and inflamed appendix 6 cm. long was found, the meso-appendix showing marked chronic inflammatory changes and shortening. There was also fresh light adhesions mostly about the outer third of the appendix. The outer 3 cm. of the organ was occupied by a bulbous enlargement not wholly unlike a fat almond seed or olive. The appendix at this point was decidedly red and swollen. This enlargement was at first thought to be a concretion, but on inspection was found to be a new growth.

The uterus was found to be a mass of small fibroids from the size of a hazel nut to that of an English walnut, and the whole mass so buried in and bound down by tough, old adhesions that, considering the age of the woman, the practical absence of fibroid symptoms and, above all, the poor condition of her pulse, a supravaginal hysterectomy was not to be thought of.

The convalescence was uneventful except that at the end of a week her catamenia began and was so profuse that at the end of the second week, before the patient left the hospital, the writer thoroughly curetted her. The curettings were negative. Since then she has been well except for such symptoms as may be expected with the climacteric. The catamenia has not appeared since the curettage eight months ago. She is now slightly heavier than at the time of operation and is of good color.

The following is the pathologists' report of the appendix furnished by Drs. Leary and Medalia of the Tufts College Medical School:

"Specimen consists of appendix measuring 6 x 2.5 cm. which had been laid open. Microscopic examination shows submucosa and mucosa replaced by a young connective tissue in which are set alveolar masses of an epithelial new growth. Alveoli are in places large, generally small, and show here and there attempts at gland formation. The new growth has involved the circular layer of muscle which is in places almost wholly replaced. The longitudinal layer of muscle is deeply infiltrated with new growth which has spread widely in the subperitoneal connective tissue. Infiltration of the tissues with lymphoid and plasma cells is general and marked.

"Diagnosis: Primary carcinoma of the appendix."

A summary of the literature and a statement of the number of cases to date brings out the fact that in 1903 Elting[1] reported 40 cases of primary carcinoma of the appendix, of which 8 were probably not primary and to which Elting adds 3 cases of his own.

In 1906, Rolleston and Jones,[2] in an extensive discussion of all reported cases up to date, review the work of Elting and add later cases and conclusions. They find 62 cases reported, including Elting's list, but consider that only 42 of them are really proved to be primary carcinoma of the appendix. They say that others of the cases are probably genuine but the proof is lacking.

Since their paper, 18 cases have been reported, mostly by German and French writers.

In 1907, Mason and Rhea reported, in the BOSTON MEDICAL AND SURGICAL JOURNAL, a case, and Lothrop, in a recent issue of the same JOURNAL, reported another case.

In closing it might be well to append the conclusions concerning primary carcinoma of the vermiform appendix which were reached by Rolleston and Jones. Their conclusions are as follows:

1. The disease is one which renders an accurate diagnosis impossible; every case in which the symptoms drew attention to this region exactly imitated appendicitis in some form.

2. Most of the older reported examples fail to withstand investigation, but as 80.9% of the 42 genuine examples have been reported since 1900 the disease cannot be quite as rare as has been thought. The microscopic size of the growth in some cases makes it probable that many such instances have been overlooked.

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[1] Elting: Trans. Med. Soc. of N. Y., 1903, pp. 324–344.

[2] Rolleston and Jones. Am. Jour. Med. Sc., Phila. and N. Y., June, 1906.

3. Pathologically, several varieties of carcinoma have been reported and also sarcoma and endothelioma. The growth is usually, however, a spheroidal-celled carcinoma which is peculiar in the early age-incidence, the slight malignancy, and the resemblance to endothelioma. Colloid change is not uncommon as has hitherto been supposed.
4. The presence of concretions is only mentioned in 3 cases out of 42.
5. The disease is not prone to affect one sex more than the other.
6. Inflammatory changes, chronic or acute, very frequently accompany the growth.
7. The immediate prognosis and the prospect of freedom from subsequent recurrences after operation are very good, particularly in the spheroidal carcinoma.

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Medical Progress.

PROGRESS IN PHYSIOLOGICAL CHEMISTRY.

BY J. BERGEN OGDEN, M.D., NEW YORK.

A NEW REAGENT FOR THE DETECTION AND ESTIMATION OF FREE HYDROCHLORIC ACID IN GASTRIC CONTENTS.

Kastle and Amoss[1] reports the following: The new reagent, which is thus far without a name, is prepared by macerating the leaves of the red cabbage with water, bleaching the solution with sulphur dioxide, boiling to expel the excess of sulphur dioxide and filtering until clear. Sometimes small amounts of egg-white are added to properly clarify the solution. When a small amount of the solution is added to $\frac{N}{10}$ hydrochloric acid or to the clear filtrate from normal stomach contents, a purplish-red color is developed in the solution. In determining the quantity of hydrochloric acid in gastric contents, 1 ccm. of filtered gastric contents is brought together with 2 ccm. of the reagent and 1 ccm. of water. This solution is then allowed to stand 10 minutes, when it is compared in a tintometer with a solution containing 1 ccm. $\frac{N}{10}$ hydrochloric acid, 2 ccm. of the reagent and 1 ccm. of water. The strength of the free acid present can then be calculated.

DETERMINATION OF PEPSIN BY THE EDESTIN TEST.

Fuld and Levison[2] have studied this reagent and find that the following method is based upon the fact that edestin is easily digested with pepsin. As the edestin becomes changed, its solution loses the power of being precipitated by salt solution. The point at which the edestin has been completely transformed into a salt soluble compound is taken as the end-point. The method is as follows: The filtered test breakfast is diluted with 20 volumes of water. This is placed in a series of test tubes (1 cm. diameter) in progressively decreasing amounts, preferably in root of ten. To each of these tubes is then quickly added 2 ccm. of a 1:1,000 solution of edestin in water and the mixture well shaken. After thirty minutes a few crystals of sodium chloride are added to each of the tubes, commencing with the least dilute solution of the filtrate, and the mixtures well shaken. The series is then examined in direct light against a black background; the tube which contains the weakest pepsin solution which does not show a trace of turbidity is taken for the calculation, which is as follows: The number of ccm. of the original gastric juice which the test tube contains is divided into the product of the dilution and the number of ccm. of edestin solution added. The resultant figure indicates the number of strength units possessed by the juice. The authors have tested the method and find that it gives good results which are easily and quickly obtained at room temperature.

SOME PHENOMENA OBSERVED IN THE PEPTIC DIGESTION OF CASEINS.

According to Long[3] the casein from cow's and goat's milk is much alike in general behavior. The equivalent weight of the former appears to be slightly lower than that of the latter. Similar salts are formed. In digestion by pepsin and hydrochloric acid the casein from goat's milk undergoes changes more slowly than does the casein from cow's milk, and finally from the goat's milk product a large residue of "pseudonuclein" is left. During the digestion the electrical conductivity values and the total and free acidity vary regularly. Both acidity values are lower for the goat casein than for the other. After prolonged digestion and separation of the "pseudonuclein" the residues left contain different weights of amino-acids or other cleavage products and their salts. These weights are much in excess of the "pseudonuclein" free casein and the increase in weight is relatively much greater for the goat casein than for the cow casein. The conductivity and total acid values of the redissolved solids from the digestion mixture appear to be much lower for the goat casein than for the other, but if the results are calculated to the basis of unit weight of solids present they are found to be nearly the same, indicating great similarity in the nature of the products formed in the two cases. The most marked difference in the two caseins, therefore, seems to reside in the amounts of the "pseudonuclein" fraction separable.

A METHOD FOR ESTIMATING RENNIN.

In order to obviate the confusing effects of different milk samples in estimating rennin, containing as they do different amounts of water, casein and salts, Koettlitz[4] proposes an empirical method. A casein solution in lime water of definite strength is used, to which a certain proportion of P_2O_5 has been added. The time required to give a coagulum with such a solution, and the amount of contraction shown by the curd at the end of twenty-four hours, indicates the potency of the rennin solution examined.

DIFFERENT WAYS OF CHECKING TRYPTIC DIGESTION.

In an article by Hedin[5] are given the results of experiments on tryptic digestion. It was found that the antitryptic action of serum albumin is due to the taking up and fixing of the trypsin either by the serum albumin itself or by some substance adhering to it. The process is either not at all or only very difficultly reversible and has much in common with the neutralization of toxins by antibodies. Through treatment with weak acetic acid, serum albumin loses the power to combine with trypsin. The addition of large quantities of serum albumin thus treated can check tryptic digestion, but the action in this case is due to the formation of an easily reversible compound with the trypsin. The action with egg albumin is similar.

THE NORMAL POISONS OF THE INTESTINE AND THE MEANS OF DEFENSE OF THE ORGANISM.

Falloise[6] has studied the effects of injecting extracts of material from various portions of the human alimentary canal. He finds that the contents of the entire intestine is toxic to animals, such as dogs or rabbits, when injected intravenously. Rapid fall of blood pressure and in fatal cases marked convulsions are characteristic of these toxic extracts. The contents of the small intestine is found to be more toxic than that of the large. Putrefaction, therefore, not only is not responsible for intestinal auto-intoxications, but seems to even diminish the amount and potency of the toxins. The poisons present in the contents of both large and small intestine seem to be identical in their effects on blood pressure and coagulability of the blood. The liver is found to exercise a slight protective function in its ability to neutralize these poisons, but the main protection of the organism exists with the intestinal mucosa.

The work of Falloise was later repeated by Cybulski and Tarchanoff[7] and the results were somewhat at variance with those of Falloise. They found that the contents of the large intestine were more toxic than those of the small. The toxicity of the small intestine is due to the digestive juices present. Bile has been shown to be toxic and pancreatic juice is found to be markedly so. It lowers blood pressure rapidly, the animal recovering very slowly or dying in two to three minutes. After putrefaction, pancreatic juice is more toxic than before if inoculated with B. lact. vulgares and the lactobacillus of Metchnikoff. Coagulation of the blood is not modified by bile or gastric juice, but disappears after the injection of pancreatic juice. Convulsions are most marked after injection of pancreatic juice. Potent poisons are produced in the large intestine by putrefaction, while in the small intestine the toxicity is due merely to the digestive juices and decomposition products.

EXAMINATION OF FECES FOR UROBILIN.

After an artificial biliary fistula or a condition of icterus, no urobilin can be found in the feces. Steensma[8] advises the following method for the detection of urobilin in feces as being very satisfactory:

A small quantity of feces is rubbed up in a mortar with a little absolute alcohol. This alcohol extract is filtered, and to the filtrate is added a few drops of a 10% aqueous solution of zinc chloride. The presence of urobilin is indicated by a fluorescence. Should the fluorescence not appear readily, any urobilogen present may be converted into urobilin through the addition of a drop of tincture of iodine to 10 ccm. of the solution. The fluorescent fluid gives the well-known urobilin spectrum, but if the content of urobilin is very low, the fluorescence furnishes a better indication of its presence than does the spectroscope.

THE CRITICAL SOLUTION POINT OF URINE. A NEW PHYSICOCHEMICAL METHOD OF EXAMINATION.

Atkins[9] advises the examination of the urine by the critical solution point method as a simple and reliable measure of functional activity and may be employed in all cases where cryoscopy would be used. A critical solution temperature of 8° corresponds to a urine of $\triangle = 0.92°$. Ordinary values of *Rc* are 11-16°. The presence of considerable amounts of *d*-glucose gives results slightly lower than would be expected from freezing point values; protein has little influence. For routine urine examinations the following method is advised: Shake some phenol crystals into a dry test tube to a depth of 1 cm. Run in from a pipette distilled water to more than cover the phenol. Warm until homogeneous. If no opalescence appears on cooling, add more water and repeat the warming and cooling. Note the temperature at which the white fog appears with subsequent separation into two layers. The temperature obtained in the mixture giving the best opalescence may be taken as the critical solution point and the proportions of water and phenol used are employed in the urine tests, the water being replaced by an equal amount of urine. The control must be redetermined for samples of phenol of different origin. The difference in the temperatures found for urine and water is the rise in the critical temperature point caused by the specimen of urine examined. Since the amount of solids sufficient to depress the freezing point 0.5° will raise the critical temperature of water-phenol about 4° (and the temperature readings are accurate to 0.1°), observations are practically as accurate as the freezing point determinations. Exactly measured mixtures of phenol and water were made and the determinations were compared with observations by the freezing point method; parallel determinations of pathological urines indicate the efficiency of the critical temperature in urinary examination.

THE EXCRETION OF CREATININ AND URIC ACID IN SOME DISEASES INVOLVING THE MUSCLES.

In an article by Spriggs[10] the following conclusions are drawn as a result of investigation:

(1) That by far the greater part, if not all, of the endogenous *creatinin* in the urine is derived from the muscular tissues, but that it is a product of the internal structural metabolism of the muscle and not of its contraction, and (2) that the source of by far the greater part of the endogenous

uric acid in the urine is to be looked for in the non-muscular tissues.

THE SPLITTING OFF OF ACETONE FROM ACETO-ACETIC ACID SALTS BY EXTIRPATED ORGANS AND PROTEIN COMPOUND.

This subject was investigated by Pollak [11] who found that on the digestion of the sodium salts of aceto-acetic acid with blood serum or with excised organs, carbonic acid is split off and acetone formed. The agent contained in the serum which causes this splitting off of acetone is an organic, non-dialyzable substance which resists heat and is not of an enzyme nature. Pure proteins, as casein and crystallized edestin, also exhibit this power of forming acetone from aceto-acetic salts. Witte's peptone and other albumoses show a similar action. Numerous protein decomposition products, even pure amino-acids as leucone and olanine, act in a similar way. Among the inorganic substances only the ammonium salts are considered. It seems that this property is dependent upon the presence of the NH_2 group.

INVESTIGATIONS ON ALCAPTONURIA.

A complete study of this subject was made by Gross and Allard [12] upon a case, the clinical history of which had been previously reported by Minkowski [13]. They found that the condition of alcaptonuria is apparently associated with ochronosis.

The most notable results are the following: (1) There was no relation between the total acidity and the amount of homogentisinic acid. (2) Generally speaking, high ammonia values were associated with high homogentisinic acid values and vice versa. (3) The amount of the acid is largely dependent upon the amount of the food, but even with a diet poor in proteins a very considerable alcaptonuria was observed (5-6 gm.). The administration of Bence-Jones' albumin, like that of other albumins, leads to an increased elimination of homogentisinic acid. (5) As a result of the administration of alkalies the quotient, homogentisinic acid ÷ nitrogen, rises. This is not the result of an increased elimination of homogentisinic acid, since the actual amount is the same with a constant diet. On the day on which alkali is given, the elimination of nitrogen, however, is smaller. We must hence assume that, as a consequence of the administration of the alkali, the homogentisinic acid-yielding group of the albuminous molecule is split off and eliminated in this form, while the nitrogenous remainder is retained in the body. (6) The influence of fever upon the elimination of the acid is shown in a final curve and, as in the alkali experiments, there is an increase of the coefficient, homogentisinic acid: nitrogen, which the writer explains upon the same basis.

REACTION OF URINE IN CASES OF PANCREATITIS. (CAMMIDGE'S PANCREAS REACTION.)

Eichler [14] reports Cammidge's pancreas reaction as follows: The urine, which may or may not contain albumen, but which must be sugar-free, is filtered, and to 20 ccm., 1 ccm. of hydrochloric acid is added (sp. gr. 1.16). The mixture is heated for 10 minutes on the sand-bath with a funnel in the mouth of a flask. The mixture is then made up to 20 ccm. The excess of acid is neutralized with lead carbonate. The lead chloride is then filtered off, and to the filtrate basic lead acetate in powder is added. The excess of lead is precipitated with sodium sulphate. It is again filtered and treated with phenylhydrazine and sodium acetate, at boiling temperature, for 10 minutes. In marked cases of pancreatitis one gets a yellow precipitate of fine needles, which dissolve in 33% of sulphuric acid. The urine of dogs with experimental pancreatitis was examined and in each case the reaction was obtained. The urine of normal dogs did not give the reaction. It is not known to what the reaction is due.

ON THE PHYSIOLOGICAL ACTION OF SOME COLORING MATERIALS AND THEIR ELIMINATION BY THE URINE.

Gantrelet and Gravellat [15] have drawn the following conclusions from the results already given in a series of articles in this journal on the physiological action of some aniline dyes, and certain vegetable coloring matters are set forth. The authors class the conclusions under three heads: *(a)* Aniline dyes studied by injecting 50 mgm. subcutaneously into rabbits, or ingested by man in amounts of 50, 150 or 300 mgm., can be divided, from a physiological standpoint, into active and inactive dyes. Those belonging to the class of active dyes, especially methylene blue, which is taken as a type, and equally methyl violet, eosin and neutral red, show their activity by their effect: (1) On nutrition, in decreasing the exchanges within the tissues (considerable lowering in the amount of total nitrogen); (2) on the kidney, in diminishing its secretory activity; (3) on the liver, decrease in the urea-forming function (resulting in a slight ammoniuria) and its glycogenic function. The inactive dyes, such as marine blue, malachite green, are eliminated without producing any change in function. Vegetable coloring matters, such as indigo, carmin, madder and hematoxylin, are inactive. *(b)* According to their excretion by the urine. Certain coloring matters, methylene blue, eosin, neutral red, fuchsine, pass into the urine as such, or in the form of chromogens of methylene blue, and hematoxylin. Others do not pass into the urine in the form of precipitates (malachite green, marine blue); reactions for the leuco-derivatives are negative. The transformation into leuco-derivatives is a simple reduction. Sulpho-conjugated products analogous to indican are present in the urine of animals or man after the injection or ingestion of coloring matters not passing into the urine as such, or in the form of chromogen. Ablation of the liver in the animal revealed the chromogen in the urine, where its presence was not disclosed at first. Normally, the liver transforms in a radical manner aniline dyes, not passing into the urine as such or in the form of leuco-compounds, either by effecting a complete change in their formulas or transforming them into sulpho-conjugated bodies. Concerning the toxicity of the dyes, the authors found a definite relation to exist between the active and the toxic doses. When 5 ccm. of a saturated solution of methylene blue or methyl violet is sufficient to kill an average rabbit (0.25 gm. per kgm.) the authors record the survival of the same animal with 50 ccm. of nigrosin; the toxic dose for this dye and for marine blue is about 0.75 gm. per kgm.

GLYCOSURIA AND THE ALIMENTARY EXCRETION OF CARBOHYDRATES.

A thorough experimental study of this subject was made by Fischer and Moore [16]. They found that rabbits which are made to excrete sugar in the urine through a diabetic puncture, the hypodermic injection of morphine, or through intravenous injections of dextrose or sucrose solutions, do not at the same time excrete sugar into their gastro-intestinal tracts. Simple hyperglycemia does not in consequence seem able of itself to bring about an elimination of sugar through the alimentary tract. When present in excessive amounts in the blood, both dextrose and sucrose pass into the peritoneal cavity. Sugar is excreted by the small intestines in all the experiments enumerated when a sodium chloride solution is injected intravenously at the same time. Through the sodium chloride solutions it is believed that the cells of the intestinal mucous membrane are so altered as to become permeable to a substance to which they were once impermeable. The large intestine perhaps shares with the small intestine the power of excreting sugar under the described experimental conditions. The experiments do not lead to positive conclusions as to whether the stomach also assumes injections of sodium chloride.

STUDIES IN EXPERIMENTAL GLYCOSURIA. ON THE EXISTENCE OF AFFERENT AND EFFERENT NERVE FIBERS CONTROLLING THE AMOUNT OF SUGAR IN THE BLOOD.

Macleod [17] finds that stimulation of the central ends of the vagus nerves in the neck (both nerves being cut) causes hyperglycemia when no precautions are taken against asphyxia. When asphyxia is carefully guarded against (by the free administration of oxygen and artificial respiration) stimulation of the central end of the vagus nerve in the neck does not cause hyperglycemia. When asphyxia is carefully guarded against, stimulation of the spinal cord at any level does not cause hyperglycemia. Stimulation of the peripheral end of the greater splanchnic nerves, when these nerves on both sides are cut, does not cause hyperglycemia. Stimulation of the left splanchnic nerve, when no nerves are cut, usually produces marked hyperglycemia and glycosuria. In many of the above experiments the urine acquired distinct reducing properties without there being any hyperglycemia. It is concluded that when every precaution is taken against asphyxia, glycogenolytic fibers are demonstrable with certainty only in the greater splanchnic nerves. In the spinal cord it is impossible to obtain evidence of their existence, possibly because of the shock which the experiments employed for their detection entail. There is no evidence that stimulation of the central end of the vague nerve can reflexly produce hyperglycemia.

THE MECHANISM OF EXPERIMENTAL GLYCOSURIA.

As a result of the investigations of McGuigan and Brooks [18], they conclude that an experimental glycosuria is not due to increased ferment activity. Proteids of all kinds accelerate the formation of sugar by the action of ptyalin. If sugar is free in the blood it passes into the urine readily. The normal sugar of the blood, therefore, must be in combination with a large molecule, which prevents its passage through the kidney epithelium, or else the kidney epithelium has no selective action for this compound. Calcium chloride will not prevent the passage of sugar through the kidney epithelium whenever free sugar exists in the blood. The permeability of the kidney is of small import in the mechanism of experimental glycosuria. The pathology of experimental glycosuria is very probably due to changes in the protoplasmic activity of the cell and is not related to ferment activity.

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Reports of Societies.

AMERICAN CLIMATOLOGICAL ASSOCIATION.

THE 25TH ANNUAL MEETING.

(Continued from No. 10, p. 315.)

DR. BEVERLEY ROBINSON, of New York, read a paper entitled,

THE HEART DURING THE EARLY PERIOD OF CONVALESCENCE FROM ACUTE INFECTIOUS DISEASE.

Dr. Robinson said that it is, perhaps, Utopian — certainly in our life and time — to hope to abolish entirely acute infectious disease. It is not Utopian, once the disease has occurred and been battled with successfully during the acute period, to contend daily and continually for a sufficient length of time against its normal or complicating sequels. Upon prevention of cardiac dilatation depends mainly all future vigor and wellbeing in most instances. The heart is easily first and most essential, notably so in typhoid fever, diphtheria, influenza, pneumonia and in scarlet fever. In acute articular rheumatism the frequent accompaniments of cardiac degeneration or cardiac dilatation are so apt to be more or less pronounced, endocarditis or pericarditis that we have a problem which is somewhat unlike that connected with the other acute infectious diseases referred to. Dr. Robinson described the pathological conditions found at autopsy and said it was fair to assume that during life in minor degree, at least, similar pathological conditions exist even after the acute stages of the disease are passed and the patient has entered into the early convalescent period. They desire to sit up, get out of bed, go down stairs and later on go out of the house for a drive or a short walk. In typhoid fever Dr. Robinson does not believe it is wisdom for the patient to sit up in bed even for a short time, for several days, usually a week or ten days, after the temperature has reached the normal. If sitting up in bed causes much increased rapidity of pulse, with irregularity and occasional intermittences, the indication is to go slowly and make the sitting up very little, or not at all, for a while. If there are murmurs or a notable weakening and lack of tone of the first sound and if, with or without murmur, the heart action is feeble, rapid, irregular and now and then intermittent, Dr. Robinson deems the patient safer flat on his back than even sitting up in bed. The blood pressure is a valuable guide. There ought to be a relatively moderate difference between the records while lying down and sitting upright. If too great we should cry a halt to any exertion at all, physical or mental. In subnormal temperature and an unusually low specific gravity of the urine, caution as to exertion is needed. Great stress was laid on restricting mental effort during convalescence from typhoid fever. Medicines were advised for fainting turns, reliance being place on strophanthus by the mouth or hypodermically and followed immediately with brandy, whiskey or ammonia. Infusion of fresh English digitalis leaves was also advised.

Sudden heart failure should be met with suprarenalin or adrenalin, tincture of strophanthus and, above all, rest for body and mind for days and weeks. Citric acid was advised to prevent the tendency to blood clotting after pneumonia. Iron is a good after-tonic. Cardiac dilatation is mainly occasioned by ignorant, injudicious, careless treatment of the early convalescent period following acute infectious disease.

Dr. Charles E. Quimby, of New York City, read a paper on

THE DYNAMIC RELATIONS OF THE HEART AND ARTERIES.

Dr. Quimby has long believed that the most effective period for the treatment of organic heart disease, either vascular or mural, is before compensation develops. Disregarding modifications of functional activity from irritation, the first effect of every cardiac lesion is a change in the ratio between the blood pressures in two adjacent vascular cavities; and the instant such change occurs the processes of compensation begin. As the primary change is an increase of pressure in the posterior and decrease in the anterior cavity, using anterior and posterior here relative to the blood current, it might seem that the result should be an increase in blood flow; but since the anterior cavity of the two primarily affected becomes posterior during a part of the cardiac cycle, every cardiac lesion produces a back pressure with increased cardiac and decreased arterial tension as the primary vascular disturbance. Compensation means increased cardiac power or hypertrophy. Compensation is the rearrangement of the physical elements and forces of the circulation in such manner as will increase quantitative blood flow in just the amount it has been diminished by the initial lesion. Given a lesion which retards circulation by lowering arterial tension, the system has no resource save restoration of that tension; and no means to accomplish that result save either cardiac hypertrophy or arterial contraction. The former takes time; the latter is instantly available. Hence in every reflux lesion the first compensatory reaction is arterial contraction for the increase of blood pressure. And this, by reason of the diminished output, must be not simply restoration but absolute increase of tension. Thus compensation at the very outset becomes an exciting cause of its own continuance and progress. Dr. Quimby holds that artificial control of the circulation in reducing arterial tension modifies in a definite degree the distressing symptoms of the earlier stages of cardiac disease and establishes compensatory equilibrium at a much earlier stage of the process.

Dr. Judson Daland, of Philadelphia, read a paper on

ANGINA PECTORIS AND OVER-FEEDING.

He described a case presenting typically the sensory symptom-complex of angina pectoris. It is especially interesting etiologically because of the absence of the ordinary causes, i. e., syphilis, alcoholism, nicotinism and excessive muscular exertion. The change in the walls of the radial arteries are rather less than would be expected from the age of the patient, which is sixty-six years.

In addition to excessive mental toil and rheumatism, which occurred nearly half a century ago, the only factor of importance is the habitual bolting of large quantities of food rich in proteids and carbohydrates, producing a marked disturbance of metabolism, as evidenced by the occurrence of indicanuria, acetonuria and inter-current glycosuria in quantities as great as 8%. The dietetic excess is regarded as the chief etiological factor.

Dr. Daland does not agree with certain authors who are inclined to reserve the term "angina pectoris" for cases of myocardial degeneration due to sclerosis of the coronary arteries and terminating fatally, usually in less than a year or two. He thinks that disease of the coronary arteries is but one of many etiological factors.

DISCUSSION.

Dr. R. H. Babcock, Chicago: In comparison with the total number of cardiac cases, cases of typical angina pectoris are rare. I see a good many cases in which the angina pectoris appears to occupy a border line. The patients have precordial pain but the pain does not answer strictly to the description of organic angina pectoris. I do not regard as organic angina pectoris a pain which comes on when the patient is quiet but one which does come on under some exciting cause. Now I have seen quite a number of very typical cases and I have seen a good many cases that occupied the border line. Of course I cannot form an opinion as to the character of the pain in Dr. Daland's case, but it would not surprise me, however, if we found that it occupied the border line and was not really such a case of angina pectoris as I am accustomed to recognize as typical. I never saw a perfectly typical case of angina that was cured by any treatment whatever. The border line cases are frequently relieved.

Dr. Morris Manges, New York: I wonder whether possibly the case described might not be a case of myocarditis rather than true angina pectoris because, after all, true angina pectoris is, in my own experience, an extremely rare disease. If I could count the cases of real angina, I think my ten fingers would cover them, and it represents a fairly large amount of experience. It is hard to understand how a patient would have the good recovery this one did if it were a true angina.

Not so much does it emphasize the effect on the blood vessels of the heart, but the part I want to emphasize is that not alone the arteries of the heart, but the arteries of the stomach. are degenerated. There is an arteriosclerosis in the blood vessels of the stomach and when these patients overfeed, these blood vessels being in the state of arteriosclerosis, the stomach cannot respond normally to the increased work put upon it. The points brought out by Dr. Daland are most important for this reason.

Dr. Robert H. Babcock, of Chicago, read a paper on

MEDICAL GYMNASTICS IN EARLY MYOCARDIAL INCOMPETENCE WITHOUT VALVULAR DISEASE.

There is a large and important group of cardiopathies which is encountered among business men and which augments greatly the death-rate. The cases referred to are found especially among men of affairs who, in response to the demands of modern commercial methods, lead very strenuous lives. The subjects are generally men of large physique, who, in addition to an occupation necessitating many hours daily at the office desk or in the counting room, are generous livers and often heavy smokers. They grow stout through neglect of exercise to which they were formerly accustomed. This begets what has been termed "idiopathic enlargement of the heart." Dr. Babcock for several years has sent such patients to a medical gymnast to whom was explained the end to be obtained and who carried out the course of gymnastics advised and practiced by Levin. These slow and strengthen the pulse instead of accelerating it, a very vital principle in such cases. These consist of active and passive movements according to the degree of myocardial incompetence present. The former comprise rolling and bending movements of the body executed by the gymnast who, standing behind the individual seated on a wooden horse with his feet held firmly by toe straps, grasps the shoulders and firmly, yet not too vigorously, bends the body forward and then rolls it around to the opposite side in a backward direction in such a manner that, flexed in the beginning, the trunk becomes extended when the movement is half completed and ends again in a position of strong flexion. Active exercises were also described, such as deep breathing, pulling and lifting. The purpose is to restore the functional integrity of the myocardium by increasing venous flow on the one side and by dilating the intermuscular arterioles on the other and by improving cardiac metabolism. The most pronounced benefit has been obtained in cases of early or moderate myocardial incompetence, shown by breathlessness or palpitation upon slight cause and, upon examination, by increased cardiac dullness, feebleness of the first tone at the apex, accentuation of the pulmonic second sound and sometimes a faint systolic whiff in the mitral area.

Dr. Thomas A. Claytor, of Washington, read a paper on

IMMEDIATE PALPATORY PERCUSSION OF THE HEART.

Dr. Claytor attributed to Ebstein the credit for the introduction of a method of determining the outlines of the heart by palpatory percussion or an estimation of the heart's resistance. Dr. Claytor described the following method different from that of Ebstein, but did not claim that it is original or new. It consists in striking the chest wall, preferably in the intercostal spaces, with the pad of the forefinger. It is convenient to rest the weight of the hand upon the slightly curved little, ring and middle fingers while the forefinger is raised and brought down upon the surface to be percussed with the amount of force which seems sufficient to produce results. When the stroke is made the finger is allowed to remain in contact with the surface for an appreciable length of time and an effort is made to estimate the resistance, thus the sense of touch is brought to the aid of hearing. It is difficult at times to say which sense is chiefly depended upon in this method, so closely are they in harmony. With the patient in either the erect or recumbent posture, Dr. Claytor begins in the left fifth interspace, in about the mid-axillary line, and gradually approaches the normal position of the apex. Usually the change of tone and the sense of increased resistance become apparent a short distance outside of the apex beat, due to the fact that the backward curve of the chest wall at the side brings the lateral aspect of the heart in the line of the percussion stroke. Dr. Claytor does not believe that it is possible to differentiate cardiac from liver dullness. Dr. Claytor showed a figure from Moritz which illustrated the boundaries of the heart. He thinks this method is more satisfactory than any other clinically and experimentally upon the cadaver, his results have been equally gratifying.

DISCUSSION.

Dr. Francis H. Williams, of Boston: All will, I think, agree that it is most important to know the size of the heart, and we may also agree that in some cases it is extremely difficult, even impossible, to determine its size accurately without an x-ray examination. When the heart is normal its size, as determined by both physical and x-ray examination, is about the same, but in many cases the fact that the heart is smaller than normal is not recognized by the usual methods of examination. Between the normal and the very much enlarged heart there is a group of cases in which it is important to know if this organ is enlarged and, if so, in what direction. X-ray examinations are of special value in these cases and the usual physical examination in a considerable proportion of them does not indicate the true outline of the heart. X-ray examinations show more definitely and conclusively than other methods that the heart is normal in size when abnormality in size had been suspected.

At the Boston City Hospital, I compared the weights of hearts after autopsy with the sizes of hearts found, and nearly all the hearts smaller than normal had been unrecognized clinically.

I recall a patient that was supposed to have an enlarged heart, a case where an examination made me ask him if he were also suffering from constipation. He said he was, and I wrote to his physician that I thought that a mild laxative would probably cure his heart trouble. Merely a case where the diaphragm was pushed up, and so they had thought he had an enlarged heart. For four or five years he has been giving himself strenuously to athletics and has had no trouble from his heart.

Dr. R. H. Babcock, Chicago: I should like to bear testimony to the value of palpatory percussion in determining the outline of cardiac dullness. It has in my hands often enabled me to determine the size of the organ very satisfactorily and corroborated or corrected the results obtained by plessimetric percussion. It is my habit in any case in which the area is difficult to outline to use all three forms of percussion and in this way I am sure I have been able to obtain results which I could not have secured by any one method alone. Palpatory percussion is of special value in cases of children, but in cases of adults with thick parietes it has in my hands been rather unsatisfactory, and yet I am satisfied that greater familiarity with the method would enable one even in fat individuals to obtain results of decided value. Recently I have rather discarded strong or heavy strokes, satisfying myself that by very light percussion the best results were obtained. (I never use, by the way, anything but my fingers for obvious reasons.) I found by the very gentlest percussion I could determine often an area to the left when by stronger strokes the vibration seemed to be so widely communicated as to yield rather unsatisfactory results. In plessimetric percussion it is very necessary to produce sufficient pressure with the finger to shut off vibrations from the chest wall.

Dr. A. K. Stone, Boston: We can all agree with Dr. Claytor that the immediate percussion in every way is the thing that has got to be learned, because we all have fingers and most of us have fairly good ears, while we all cannot have x-rays in our offices. I think that the main thing that we really get out of fluoroscopic examination is that it is a confirmatory thing. It is mighty nice to see with your eyes.

There are additional points, of course, that one can get with the orthodiagraph that makes it a very desirable adjunct. It has seemed to me that this flood of literature that we have had from Germany in regard to methods of percussion in the last few years has been largely due to the fact that the Germans have used heavy percussion heretofore and have found that their results did not correspond with the results of examination with the orthodiagraph and they are now coming round to the light method which we for a long time have been taught in Boston by Shattuck, Cutler and Sears.

Dr. Carroll E. Edson, Denver: Those of us who are interested in various methods of auscultation and percussion have long appreciated the great importance of the lighter methods of percussion. In this very point of light percussion which is now brought to our attention as something new, because labeled "Made in Germany," Boston may claim some honor of priority. As long ago as 1830, when auscultation and percussion were new diagnostic measures freshly brought from France, Dr. Holmes, by inference at least, called attention to the desirability of light percussion when he said:

"They thumped his briskets; called it, 'sound his lungs' ";

and again,

"Percussion as before,
Thumping and banging till his ribs were sore."

Dr. Charles L. Miner, Asheville, N.C.: I am satisfied that the x-ray will be found of great assistance in our work. At times I have found it of extreme value in defining small conditions that had not been suspected. As a general rule it will not enable one to make a diagnosis as early as it can be made by the skilled use of our regular procedures, but it gives one a knowledge of what we might call the geography of the lesions, not to be had otherwise, and corroborates the results of percussion and auscultation most beautifully. In the diagnosis of enlarged bronchial glands it is by all means our most accurate method.

Dr. DeLancey Rochester, of Buffalo, N. Y., read a paper on

THE RÔLE OF DIGITALIS IN THE TREATMENT OF DISEASES OF THE HEART.

It is when compensation is failing or, through some physical, mental or psychic strain, has been suddenly broken that treatment is called for. In fatty degeneration digitalis is useless and usually harmful, the myocardium being unable to respond to the drug, and greater pressure being brought against it through the contraction of the peripheral arterioles. In acute endocarditis digitalis is seldom needed or useful except in those rare cases, especially in conjunction with pneumonia when there is a tendency to ventricular dilatation, when digitalis, in conjunction with bloodletting and active elimination, is useful. It is in the chronic valvular lesions of the heart that digitalis finds its greatest use and often its greatest abuse. If, under the use of digitalis, the pulse is irregular or there is abortive systole or violent palpitation or precordial distress the drug should be stopped. In aortic stenosis digitalis can be kept up longer and gives the best results when combined with nitroglycerin, sodium nitrite or sodium iodide in small doses; or the regular use of the hot air bath or a saline laxative. Digitalis is most useful in lesions of the mitral valve, especially mitral insufficiency.

Digitalis should almost never be used alone. Measures of elimination should in all cases precede or accompany its administration. Great stress was laid in being sure of the drug and the pharmacist. Dr. Rochester relies on the powdered drug and fresh infusion from English leaves, Squibb's tincture and Squibb's or Wyeth's fluidextract.

DISCUSSION.

Dr. R. H. Babcock, of Chicago: In referring to the effect of digitalis in aortic insufficiency, Dr. Rochester gives the explanation which I have always held; that is, that digitalis may be injurious in aortic insufficiency because of its prolonged diastole. The recent work done by Stewart at Johns Hopkins Hospital in many respects completely reverses our ideas of the mechanical effect of aortic insufficiency on the heart and has a very direct bearing on the influence of digitalis.

The period of diastole in practically all individuals is invariable, no matter what the rate of the heart may be, and is not affected by digitalis. When, therefore, in aortic insufficiency the collapse of the vessels is not marked, the proper drug or remedy to use for the relief of the symptoms arising in that case is a vaso-dilator, and on the same principle strophanthus would be preferable to digitalis.

Dr. Frederick I. Knight, Boston: I would like to say something about the practical administration of digitalis. It seems to me that all of us have had about the same experience, particularly in consultation work. We say, "Have you tried digitalis?" "Oh, yes; I have tried 5 drops, or 10 drops, three times a day." Half the time that is no test at all.

In regard to digitalis particularly, my experience has been to begin with a comparatively small dose and to gradually increase it until you get the proper action of the drug. Now that may be small in one and large in another for two reasons,—the quality of the drug and the special conditions of the patient. I think that physicians will find that they have a very different result if they use digitalis in this way with a gradual increase until they get the physiological action of the drug or have some reason to stop its administration.

Dr. C. E. Quimby, of New York: There is no other factor of cardiac disease so much neglected as the supplementary and complementary action of the heart and arteries and the marvelous suddenness with which these relations may be changed. So long as the two retain adequate power the relation is supplemented, and in this condition digitalis will act equally well on the two; but the instant the circulation lags the action becomes complement and the stronger, usually the arteries, takes up the work the other fails to do; and in this condition digitalis may be very injurious. Often the cardiac failure is only weariness and is soon relieved when the former relations are restored. When these relations are marked the indication for digitalis is plain; but in many cases failure is imminent without being obvious, and it is in these cases that so much harm is done by the indiscriminate use of digitalis. Many years of hospital experience has made me feel that every medical graduate should have been taught as an inflexible rule never to use digitalis with a weak heart and low blood pressure if the pulse is weak and the artery small, until after that heart has had, at least, temporary rest under some form of arterial dilatation. In the vast majority of such cases glonoin will raise the blood pressure while digitalis will lower it.

Dr. Egbert LeFevre, New York: Dr. Stewart's work has helped our interpretation of physical signs occurring in aortic regurgitation, but I do not accept his conclusion that the regurgitant stream is not an important factor in producing a ventricular dilatation. I believe that the objection to the use of digitalis in aortic regurgitation has been largely based upon one phase of its action only, namely, that of showing the cardiac rate and the fear that extensive distention of the ventricle will occur during diastole. While the heart is slowed under the action of digitalis there is a very distinct change in the contracted period. The second sound, while it denotes the closure of the aortic valves and shows that the pressure in the aorta exceeds that in the heart, does not necessarily coincide with the beginning of diastole, when the heart is under the influence of digitalis. The digitalis heart remains contracted for a time after the closure of the aortic valves; during this period, short as it is, there is no regurgitation into the ventricle and the pressure in the aorta is relieved, so that when diastole does occur the regurgitant stream has lost much of its force. This beneficial action of digitalis can only be obtained when the cardiac muscle is in a condition to respond in a greater degree than the muscle tissue in the arterial tract. On the other hand, if a cardiac muscle does not respond to the action of the digitalis then there occurs a constriction effect upon the peripheral circulation which increases the danger from the regurgitant stream.

Dr. Rochester closes: In regard to Dr. Stewart's investigations which Dr. Babcock has referred to, I feel that they must be confirmed by other observers. I do not feel that we ought to accept any single man's investigations or even of two without confirmation by our work and of others. In regard to diastole, I think we have all recognized that there was a period of complete rest during that portion of the cardiac cycle called diastole. In regard to the various preparations of digitalis and the doses, I heartily agree with what has been said by everybody,—we must be sure of our preparation. The ones I mentioned are those which I found useful. Just to illustrate that very point, in two cases in the hospital we were using digitalis in mitral insufficiency where we thought we ought to get good results, and we were using a tincture from a Western firm, and we got no results at all. We then used Squibb's Tincture, and in twenty-four hours got the results desired.

In regard to Dr. Quimby's remarks, I feel that it illustrates more fully than anything else that we must never rely on any single drug; that we must use the other methods of keeping up the capillary circulation if we are going to use the digitalis with good results.

Dr. Morris Manges, of New York City, reported a

CASE OF TUBERCULOUS PERICARDITIS; EMBOLIC HEMIPLEGIA THREE DAYS AFTER PARACENTESIS.

The patient, a porter, aged nineteen, suddenly complained of fever, pains in the head, chest and epigastrium and of cough. He had a temperature of 104° F. on the fifth day, respiration 32; pulse, 120. Leucocytosis, 13,000. Heart normal. Ten days later there was pain over the liver with marked rigidity over it and considerable abdominal distention. The fever and respirations remained high and the leucocyte count between 14,000 and 25,000. At the end of the sixteenth day there was cyanosis and increase of the heart's area to the right but no evidence of endocarditis or pericarditis. The leucocyte count dropped to 10,000; and, at the end of a month, to 6,600. Later there was a sudden attack of dyspnea and a fine aspirating needle was introduced into the fourth space, 5.5 ccm. to the right of the median line, and 10 ccm. of serosanguineous fluid withdrawn and again 10 ccm. drawn. The needle was withdrawn and a trocar introduced and connected with a Kroenig aspirating siphon and 600 ccm. were withdrawn. Great relief was afforded, the pain in the liver and the dyspnea ceasing almost immediately. The fluid reaccumulated moderately and the patient suddenly had a right hemiplegia; no convulsion or loss of consciousness. He was again aspirated eleven days later. The pericardial fluid was found to be tubercular and von Pirquet's reaction was found to be positive. Later he had an epileptic convulsion involving the left half of the body, lasting thirty seconds. He died at the end of seven and a half months with dyspnea and cyanosis. The autopsy showed that the entire pericardial sac was converted into a thick mass of recent and old fibrous tissue varying from .5 to 1.5 ccm. in thickness. No distinct tuberculous lesions present. A tuberculous lymph node was cheesy. The hemiplegia was embolic from a thrombus in the pulmonary vein. The left lenticular nucleus was necrotic with yellow softening at its center.

DISCUSSION.

Dr. Daland: I do not quite understand his paper. Was it a case of miliary tuberculosis from the original infection?

Dr. Manges: In answer to Dr. Daland's question: the miliary tuberculosis was simply the end of the result of a primary tuberculosis of the pericardium.

I want to correct an impression I might falsely have made. When I made a plea for the tapping of the pericardium on the left side, I refer to it for aspiration purposes. For simple diagnostic purposes, I believe in the old rule that it can be best done on the right side.

Dr. Lawrason Brown, of Saranac Lake, N. Y., reported a case of

DISSECTING ANEURYSM OF THE AORTA AND PULMONARY ARTERY FOLLOWING RUPTURE OF THE ARCH OF THE AORTA.

This case was reported on account of the unusual course taken by the blood after rupture of the aorta. The patient was a lawyer, aged fifty-four, of small stature but wiry, and had pulmonary tuberculosis. The sputum was examined by his physician during an acute attack previous to his coming to the Adirondacks and tubercle bacilli were found; but this attack cleared up rapidly after his arrival in the Adirondacks and it was probably a bronchopneumonia. There was no evidence of any tuberculous lesion of the lungs. The temperature ranged from 99° to 103° F. He had night sweats but no pleurisy, no shortness of breath. Radial arteries thickened; heart, except for accentuation of the second sound, was negative. While in the Adirondacks he had hemophyses and phlebitis; but about four months after coming under observation while at the breakfast table he felt a sharp pain at the base of the neck and fell off the chair unconscious. He vomited a half hour later. There was no thrill and the valvular sounds were clear. The area of heart's dullness was greatly increased.

The patient died on the following day. At the autopsy the aorta was found considerably enlarged and very black. There was a rent 2.5 ccm. above the aortic valve and on the lesser curvature was found a semilunar rent of the intima and media in which lay a thrombus. The blood had dissected away the adventitia to the base of the heart on both aorta and pulmonary artery, and it extended in the opposite direction along the pulmonary artery a considerable distance into the lungs, so that on separating the lobes of the right lung the extravasated blood could readily be seen under the pleura about the base. It also extended into the left lung and along the aorta. The aorta and endocardium were atheromatous. The heart was hypertrophied.

Dr. H. D. Arnold, of Boston, read a paper on

HIGH-FREQUENCY ELECTRICITY IN THE TREATMENT OF CARDIAC DISEASE.

This paper appeared in the issue of Aug. 20, 1908, of this Journal.

Dr. Arnold also showed an improved apparatus for taking blood-pressure. It is an aneroid sphygmomanometer designed by Dr. Rogers. It has a great many advantages, among which is its small size. Dr. Arnold does not find that it varies more than 5 mm. from the reading of the mercury column and it has been very satisfactory in every respect. One advantage that this has over the ordinary aneroid manometers is that the scale can be changed, and if it gets out of adjustment it can be put back to zero. The cost of the apparatus is $20.

Dr. A. K. Stone, of Boston, read a paper on

ULCERATIVE ENDOCARDITIS.

This was illustrated with water-color drawings from specimens. This paper appeared in this Journal, July 16, 1908.

DISCUSSION.

Dr. Thomas A. Claytor, Washington: It is probable that not less than 75% of cases of ulcerative endocarditis are grafted upon an old chronic lesion. The previous existence of an endocardial lesion is both an aid and a hindrance, to be rather paradoxical, in making a diagnosis, because if we are aware of the old lesion we hesitate to attach so much importance to it. At the same time it is frequently seen in old lesions. A friend of mine who was a physician and had recently had yellow fever asked me to examine his heart. He had a mitral insufficiency and an enlarged heart. A year ago last February he was attacked with what seemed to be an influenza, but in a short time he developed all the typical symptoms of sepsis. I saw him in consultation with several other physicians, and he then developed the symptoms of fevers, sweats and chills. I remembered these symptoms had existed two years ago, all of which complicated the diagnosis. Death occurred in September.

At the Executive Session the association elected the following officers: President, Dr. Charles E. Quimby, of New York; Vice-Presidents, Dr. E. R. Baldwin, of Saranac Lake, and Dr. Carroll E. Edson, of Denver; Secretary and Treasurer, Dr. Guy Hinsdale, of Hot Springs, Va. Representative to the Executive Committee of the Congress of American Physicians and Surgeons: Dr. Frederick I. Knight, of Boston, and Dr. R. G. Curtin, of Philadelphia, alternate. Members of the Council: Dr. J. C. Wilson, Dr. W. F. R. Phillips, Dr. E. L. Shurly, Dr. Thomas Darlington and Dr. Thomas D. Coleman.

The next meeting will be held at Fortress Monroe, Va., June 4 and 5, 1909.

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Pasteurized Milk Stations.—Nathan Strauss, of New York, arrived on Sept. 4 from Europe where he had spent a year introducing his system of pasteurized milk stations in England and on the continent.

Book Reviews.

The Natural History of Cancer. With Special Reference to Its Causation and Prevention. By W. Roger Williams, F.R.C.S. New York: Wm. Wood & Co. 1908.

This considerable volume is a remarkably stimulating and interesting work. It meets the expectations of those who are familiar with the previous writings of the distinguished author, whose present introductory paragraphs are worth quoting: "The subject of cancer has hitherto been investigated far too exclusively by the pursuit of details in ultimate analysis, and hardly at all by the synthetical and comparative methods which have been so profitably employed in other branches of biological research. As that fine pathologist Billroth has remarked: 'Everything is too hurried nowadays. We suffer from an insatiable craving for new or apparently new facts in the hope of obtaining a possible sensational success. No time is allowed to reflect upon, or to reconsider, the onward course of scientific inquiry. Where are we? What have we left behind? What is ahead? Is it worth while to go farther in this direction or in that? Has detailed work given us a profitable knowledge of, or an insight into, the whole subject? No one finds time to answer such questions.'"

Williams does not pretend to discuss treatment, but confines himself closely to his title. He is discursive, informing and interesting. Much of the book is taken up with statistics on the increase of cancer; its distribution; tumors in animals and vegetables; the influence of sex, age and family history; and the course of cancer; while the important and vital argument of the book deals with cancer's etiology.

We have seen no writing in English which presents so concisely and with such pertinence the important facts in the present discussion of the causation of cancer.

Williams does not accept the parasitic theory. Says he: "In short, it is evident that out of the confusion of a transitional period but two conceptions as to the origin of tumors have emerged, the one based on the cell theory and the other on the microbe theory, and henceforth the struggle must be between these two. Briefly stated, the question now is, Do cancers and other tumors arise through a modification of the formative process or are they the outcome of the inflammatory process, owing to the contusion of muscles or other irritants, *ab extra?* In other words, Are they essentially of intrinsic or extrinsic origin? . . . When the issues are thus plainly stated, the great importance of choosing a working hypothesis at once becomes apparent; for of the two alternatives, only one can be true. *My own belief is* [italics ours] that tumors arise mainly from the abnormal play of forces generated within the body, and it is to this aspect of the question that I now propose to direct attention."

All students of the cancer problem will read this volume, and every intelligent practitioner should be familiar with its general purport.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, SEPTEMBER 10, 1908

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PLAGUE.

AN illuminating pamphlet entitled, "The Present Pandemic of Plague," written by Assistant Surgeon-General J. M. Eager, under the auspices of the Public Health and Marine-Hospital Service of the United States, has recently been published and affords a brief and extremely interesting commentary on the ravages of this disease. Starting fourteen years ago in the province of Yunnan, China, bubonic plague has spread from this focus to countries in all portions of the earth, and in many situations has become definitely established. The revival of the disease dates from 1894, the year in which it reached Canton from the province in which it originated. The type of plague which is known as the Indo-Chinese "strain" has peculiar power of diffusion. Previous to 1894 the disease appeared for many years in various localities distant from endemic plague centers, but in no case did it develop endemic proportions until 1894. In that year a series of ramifications of the disease took place which have since spread over the entire world. In 1894 a rough estimate gives 120,000 as the number of deaths in Canton alone between March and August. The native population and rats were affected, but not a single case occurred in the foreign quarter.

Two years later the disease appeared in violent form in Bombay, presumably imported from southern China. In spite of native prejudice, active sanitary measures were enforced and prophylactic inoculation was practised. The following year the number of cases in India was upward of 73,000, with over 55,000 deaths. There were also epidemics in China, Formosa, and a few cases appeared in Japan. In 1898 the number of cases and deaths in India more than doubled, with a mortality of 117,000. At this time an attempt to prohibit Mohammedan pilgrimages failed. Nevertheless, improvements in sanitation served as a partial prophylactic. In this year the disease extended far from its starting point and even reached the African islands of Madagascar and Mauritius. The year 1899 showed an increase in the spread of the disease. India was visited, as it had been the preceding years, the disease appeared in various provinces of China, and the continent of Africa was likewise invaded. For the first time cases appeared at Honolulu; the disease was epidemic at St. Denis, capital of Réunion Island, and even the Pacific islands of New Caledonia were visited. In Europe, Portugal, Russia and Austria were all invaded, the origin of the infection not always being clearly accounted for. In this year also South America was invaded; Paraguay, Brazil and Argentina all had cases. In 1900 the disease had spread to every quarter of the globe, including North America, although it was somewhat less virulent in India. The hope raised by this latter fact was found the following year to be unfounded, inasmuch as in 1901 the disease increased threefold, with a record in all India of more than 362,000 cases and 278,000 deaths.

After the establishment of the disease in every continent, the history of its endemic spread becomes of interest in relation to intracontinental expansion. Although North America has never been visited to any great extent by the disease, there were in 1901 thirty cases, with twenty-five deaths, in San Francisco, presumably introduced from the infection centers of the East. At many places limited epidemics took place, more or less directly traceable to conveyance by sea. For example, at Hull, England, ten cases occurred, all of which, with the exception of a physician, were members of the crew of a vessel from Alexandria, Egypt. In 1902 a still greater increase of the disease took place in India, with a record of 755,000 cases and more than half a million deaths. A year later the numbers in India were 1,127,000 cases and 835,000 deaths, and up to 1906, when a marked decrease in the number of deaths took place, the mortality in India became about one million a year. In 1906, however, the disease decreased to such an extent that only 332,000 deaths were recorded. Here, again, the hope was short-lived, for in 1907 nearly a million and a half cases occurred, with 1,200,000 deaths. India, remains, therefore, the center of the greatest mortality from the disease, although extensive epidemics have continually occurred in other countries. The reasons for this we cannot enter upon here, but it is significant that the number of deaths in succeeding years should vary by hundreds of thousands, which suggests at least underlying conditions as yet imperfectly understood.

Several cases of plague have occurred as the result of laboratory experimentation. In 1898 a laboratory attendant died in Vienna, as well as a physician and nurse who cared for him in his illness. In 1900 a medical student at Ann Arbor, Mich., developed the disease while undertaking laboratory experimentation, but fortunately recovered. In Berlin, and at Cronstadt, Russia, similar cases have been reported. The latest report for the year 1908 shows that up to July 1 two countries in South America and the British Gold Coast of Africa have been invaded by the disease, together with one of the Azores Islands. This brings the total of plague-infected countries, since the primary outbreak in China in 1894, up to the astonishing figure of fifty-two. Although our knowledge of the propagation of the disease has developed remarkably in the past few years, it is apparent that the infection has now so widespread a distribution that, as suggested in the pamphlet before us, the sanitary problem becomes a most complex one in relation to the infection of new localities. Although the disease is hardly likely to become the menace to other countries which it has been to India, the fact remains that wherever plague appears, a dangerous focus of infection is set up which may spread widely.

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INTERNATIONAL CONGRESS ON TUBERCULOSIS.

The session of the International Congress on Tuberculosis begins the 21st of this month at Washington, D. C., and continues until Oct. 12. Elaborate preparations have been made for this congress, and it is hardly to be questioned that it will exceed in effectiveness any hitherto held. As an epitome of the enormous amount of work which has been done in the past few years in combating tuberculosis, it will no doubt stand out as a most significant meeting. It is certainly a matter of congratulation that the entire civilized world has taken hold of a great problem in a thoroughly co-operative spirit, of which this forthcoming congress is the expression.

Massachusetts, through its pioneer workers in this field, has long been pre-eminent, and it is therefore particularly to be desired that the state representation at the congress be adequate. The quota allowed for Massachusetts is 510, but at the last report only 113 had enrolled themselves. There should naturally be a much larger number than this if the state is to occupy the position it should at the congress. We are, therefore, glad to call attention to the situation and express the hope that those who have been late in applying for membership in the congress will forthwith take advantage of their opportunities. Membership in the congress is not confined to physicians, and laymen interested in the general subject are urged to join. It may not be generally known that each member will be entitled to all the publications and transactions, as well as to a special medal and all the privileges of the congress. In addition to this, each member from Massachusetts will receive a copy of the State Memoir, a volume of fifteen or twenty chapters, profusely illustrated, and a complete bibliography of all the writings on tuberculosis by Massachusetts men. Application blanks for membership may be had of Dr. David Townsend, 405 Marlboro Street, Boston, Chairman of the Sub-Committee on Publicity; or from the Secretary of the Massachusetts Committee of the International Congress, 309 Ford Building, Boston. In view of the fact, as we have suggested, that in much of the work connected with tuberculosis Massachusetts has been the pioneer, if for no other reason, enrollment from this state should be liberal. Quite apart from this motive we have no question that attendance at this great congress will prove a stimulating event in the experience of those who may go, whether as active participants or as listeners. The real significance of such a gathering is the comprehensive spirit of co-operation toward combating a common evil, and this may and should attract many whose primary interests may lie in other fields. We urge upon our readers their privilege and duty in becoming members of this most notable congress.

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UNITED STATES NAVAL MEDICAL BULLETIN.

The somewhat recently established *Naval Medical Bulletin* for the information of the medical department of the United States service should be a publication of much value, not only to the service itself, but to the profession at large. The object of this bulletin is to place in permanent form professional matters observed by medical officers at stations and on board ships in every part of the world, and also those pertaining to the physical welfare of the naval personnel. It is manifest that the naval service in the persons of its qualified officers has a peculiar opportunity for the study of disease in many of its unusual aspects, and that such a publication might easily attain a high degree of scientific value. The bulletin is issued quarterly and embodies matters relating to hygiene, tropical and preventive medicine and various other matters which are primarily of interest to naval medical officers and secondarily to physicans everywhere. As the Surgeon-General points out, many reports and notes are sent in which can by no possibility be incorporated in the annual report. It is such communications, when of sufficient merit, that it is proposed to publish. The periodical also contains abstracts in various departments of medicine which should be of general service. There is certainly no better method of inspiring good work, as well as of disseminating it, than through the medium of papers carefully prepared for publication. We have no question that this periodical, therefore, will fill a place of great usefulness in the naval service.

MEDICAL NOTES.

Cholera at St. Petersburg. — It is reported that Asiatic cholera has appeared in St. Petersburg and that fifteen cases have been officially reported.

Dr. S. Weir Mitchell Honored. — It is reported that Dr. S. Weir Mitchell, of Philadelphia, has been elected a foreign fellow of the Royal Society of England. Benjamin Franklin is said to have been the first American elected, and but three American members are now living — Alexander Agassiz, George W. Hill and Simon Newcomb.

Death of M. Becquerel. — M. Becquerel, widely known through his researches leading up to the discovery of radium, died Aug. 25. Becquerel had for many years experimented with the fluorescent salts of uranium and discovered the peculiar rays which afterwards were known under his name. This and much other work of similar character placed him among the most progressive scientists of the time. He was an officer of the Legion of Honor, a member of the Académie des Sciences, and held honorary degrees from many universities, together with other similar honors. As a recognition of his special work, in 1903 he shared the Nobel prize in chemistry with Professor Curie.

International Medical Congress. — The American committee for the sixteenth International Medical Congress is composed of the following men: Chairman, John H. Musser, M.D., Philadelphia, Pa.; the President, H. L. Burrell, M.D., Boston, Mass.; the President-elect, W. M. Gorgas, M.D., U. S. A., Washington, D. C.; the Surgeon-General of the Army, Robert M. O'Reilly, M.D., U. S. A., Washington, D. C.; the Surgeon-General of the Navy, Admiral P. J. Rixey, M.D., U. S. N., Washington, D. C.; the Surgeon-General of the Public Health and Marine-Hospital Service, Walter Wyman, M.D., and fifty-two others. Contributions to the Congress must be announced to the Secretary before January, 1909. It is desired by the committee that the manuscripts should be in their possession by the 31st of January, 1909. It should be known that the time for the reading of a paper does not exceed twenty minutes and that manuscripts should be clearly written, as the correction of the proofs is attended to at the office of the General Secretary. Copies of manuscripts will be returned by July 31, 1909. The General Secretary is Prof. Emil Grosz, M.D.; the address, Budapest, VIII, Esterhazy-uteza 7. Arrangements are in good progress and the preliminary program contains the names of distinguished men throughout Europe and this country. Professor Osler writes that there is much enthusiasm. Arrangements are under way for an excursion to Constantinople, returning by the way of Greece.

Blank forms of application for membership to the Congress and for the presentation of papers can be had of the chairman of the committee, J. H. Musser, M.D., 1927 Chestnut Street, Philadelphia, Pa.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Sept. 8, 1908, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 54, scarlatina 32, typhoid fever 26, measles 19, smallpox 0, tuberculosis 40; cerebrospinal meningitis 0.

The death-rate of the reported deaths for the week ending Sept. 8, 1908, was 18.71.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Sept. 5, 1908, was 228, against 232 the corresponding week of last year, showing a decrease of 4 deaths and making the death-rate for the week 19.21. Of this number 117 were males and 111 were females; 220 were white and 8 colored; 168 were born in the United States, 53 in foreign countries and 5 unknown; 50 were of American parentage, 146 of foreign parentage and 32 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 53 cases and 3 deaths; scarlatina, 36 cases and 0 deaths; typhoid fever, 44 cases and 2 deaths; measles, 12 cases and 0 deaths; tuberculosis, 40 cases and 18 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 9, whooping cough 7, heart disease 16, bronchitis 2 and marasmus 15. There were 14 deaths from violent causes. The number of children who died under one year was 84; the number under five years 110. The number of persons who died over sixty years of age was 40. The deaths in public institutions were 88.

Cerebrospinal meningitis, 2 cases and 2 deaths.

Change in Policy of the Yale Medical Journal. — The *Yale Medical Journal* has announced that hereafter it will be affiliated with the State Medical Society of Connecticut. The proceedings of the society will appear in the journal and its members be entitled to a copy. It is expected thereby to increase the scope and usefulness of the journal.

Bequests. — By the will of the late R. W. Lord, of Boston, $13,000 is left to various charitable institutions. Among the beneficiaries are the following: $2,000 each to the Boston Children's Hospital, the Convalescent Home of the Children's Hospital and to the Industrial School for Crippled and Deformed Children; $1,000 each to the Perkins Institution and the Massachusetts School for the Blind; $600 each to the Woman's Charity Club Hospital and to the Society for Helping Destitute Mothers and Infants.

NEW YORK.

Death of Dr. Edgar L. Phillips.—Dr. Edgar L. Phillips died on Sept. 1 at Goshen, N. Y., where he practised for many years. He was born in Phillipsburgh, N. Y., in 1827, and it is related of him that in 1858 he joined the rush to Pike's Peak, traveling overland with an outfit of drugs and other medical supplies, and driving a large herd of cattle from the Missouri River to the new gold region. During the Civil War he served as surgeon of an Illinois regiment.

Annual Appropriation for Bellevue and Allied Hospitals. Dr. Brannan, president of the board of trustees of Bellevue and Allied Hospitals, has asked for an increase of over $270,000 in the next annual appropriation for Bellevue Hospital. This increase is principally for the completion of two pavilions which will accommodate 396 patients, and it is expected that they will be fully occupied during 1909. The opening of these new buildings will permit of the removal of several old wooden structures, and the net increase in the number of patients which the hospital can then care for will be 246.

Bequest to New York Post-Graduate School and Hospital. — By the will of Frederick Cooper Hewitt, of Owego, N. Y., who died on Aug. 30, the munificent legacy of $2,000,000 is left to the New York Post-Graduate Medical School and Hospital. This gift, it is stated by Dr. Arthur F. Chase, secretary of the Post-Graduate Corporation, will make possible the carrying out of plans which have long been cherished by the board, and which will place the school in advance of all the foreign institutions of its kind. Mr. Hewitt's intention to make it was unknown to the members of the board in general, but is probably to be explained by the facts that he was a classmate at Yale of Dr. D. B. St. John Roosa, the founder of the Post-Graduate and its president up to the time of his death, and also a close friend of Dr. Andrew H. Smith, the vice-president since the organization of the school. Dr. George N. Miller is now the president, and he is deeply interested in its welfare and an enthusiastic worker for it. A large legacy received a year ago from the Margaret Jones estate rendered possible a much-needed extension of the laboratory facilities of the school, and it is expected that with the ample means now at command various other departments will be developed to a high standard. Among the plans of the management contemplated are an advanced department of hydrotherapeutics such as cannot be now found short of Carlsbad, and the provision of facilities for thorough instruction in all branches of tropical medicine. Among the other bequests in Mr. Hewitt's will are $500,000 to Yale University, $200,000 to the Little Missionary Day Nursery of New York, $100,000 to the New York Free School for Crippled Children, and $100,000 to the Netherwood (N. J.) Fresh Air Home.

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Current Literature.

The Archives of Internal Medicine.

July, 1908.

1. *Meltzer, S. J. *The Nature of Shock.*
2. *Wells, H. G. *Chloroform Necrosis of the Liver.*
3. Barach, J. H. *Morphology of the Blood in Pertussis.*
4. *Goodall, H. W., and Joslin, E. P. *Experiments with an Ash-Free Diet.*
5. *Pemberton, R., and Sweet, J. E. *The Inhibition of Pancreatic Activity by Extracts of Suprarenal and Pituitary Bodies.*

6. FARR, C. B., AND GOODMAN, E. H. *The Clinical Value of the Quantitative Estimation of Pepsin, with Special Reference to the Mette and Ricin Methods.*

1. The author considers the various theories to account for shock and cites a series of experiments he has made on dogs and rabbits which show the part played by inhibition in the condition of shock.

In his experiments, opening of the abdomen and evisceration led invariably to a reduction of the sensibility of the skin and to general apathy, from both of which the animal is apt to recover sooner or later when the viscera are properly taken care of. While both of these conditions may attain sometimes a considerable degree of intensity, the heart and blood pressure remain entirely unaffected. If the rough handling of the viscera continues, the insensibility and the general apathy increase. In vigorous animals this did not readily lead to the surrender of the functions of the body to complete shock, so that even after many hours of exposure and handling, blood pressure, heart and respiration still had suffered little. In less vigorous animals, also, the last-named functions gradually surrendered to effects of continuous rough handling of the viscera; these animals gradually sank into complete shock. Finally, in animals with reduced body resistance, shock appeared soon after laparotomy and evisceration.

The author believes that the various injuries which are capable of bringing on shock do so by favoring the development of the inhibitory side of all the functions of the body. This predominance of inhibition makes its appearance first in those functions which are of less immediate importance to life and are, therefore, less insured by safeguards protecting their equilibrium. With increased injury the inhibition spreads also to the more vital and, therefore, better-protected functions of the nervous system. In the development of shock the early inhibition of the functions of lesser importance might even be looked on as being, in a degree, conservative measures of protection of other more important functions of animal life. Throughout the body for every function are nerve fibers which excite and which inhibit. The normal state of a function results from a proper balance of antagonistic stimulations, and the important functions are well provided with factors of safety to keep up the normal equilibrium. Under unusual abnormal conditions, however, there may arise a tendency toward a deviation in one or the other direction; that is, the direction of excitation or inhibition. With regard to shock, the author's theory assumes that the injuries which produce shock disturb the equilibrium, causing a tendency toward inhibition.

2. Wells reports a case of chloroform necrosis of the liver in a man twenty-nine years old. He has made a complete chemical analysis of the case and also of its pathologic anatomy. He gives references to the literature on the subject. He finds that cases of delayed chloroform poisoning described in the literature apparently tend to group themselves into two classes. In one, which affects chiefly children, the symptoms are those of acidemia or acetonemia without jaundice, and in these cases the changes of the liver are not very marked, consisting, according to the published descriptions, chiefly of fatty degeneration about the periphery of the liver lobules The other type is observed chiefly in young adults and clinically is marked by profound jaundice, cholemia, hemorrhages and the usual symptom complex of a rapidly fatal acute yellow atrophy of the liver. Anatomically the liver appears much as it does in acute yellow atrophy, being reduced in size, flabby, yellow and showing microscopically an extreme grade of necrosis, beginning in the center of the lobule, with more or less fatty degeneration. Intermediate cases occur that do not fall distinctly into one or the other of the two types; histologic studies of these cases of the second type to which the name " chloroform necrosis of the liver " may be appropriately applied show a striking constancy of structural changes; these consist of total necrosis of all liver cells except those at the periphery of the lobule, with autolytic degeneration of the necrotic cells and fatty degeneration of those cells that are not necrotic. The capillaries and bile vessels do not seem to be affected; there is no thrombosis and no inflammation or proliferative reaction, chemical analysis corroborates the histologic evidence of fatty changes and autolysis, there being found a slightly increased amount of fat and the presence of considerable quantities of free amino acid, purins, proteoses, peptons and polypeptids, derived from the autolysis of the cells.

He discusses the probable causes of this condition and its relation to acute yellow atrophy.

4. Joslin and Goodall report the results of their experiments on two individuals placed on an ash-free diet for periods of thirteen and nine days respectively. These individuals showed no marked changes in metabolism. The result simply represented the withdrawal of accessory salts from the body and confirms the views of earlier writers that it is practically impossible to diminish the chlorine of the body by more than 10 to 14%, and that the loss of water is proportionate to this. No remarkable symptoms appeared and those that occured were rather less than would be expected from such a diet, even though it contained a normal quantity of salts The authors do not feel that the results afford a basis for any far-reaching deduction as to changes in metabolism, and they certainly give no support to the view that the withdrawal of salts from the diet will cause an acidosis of the acetonic variety.

5. Pemberton and Sweet report their conclusions from their work on the effect of suprarenal extract and extract of pituitary bodies in inhibiting the pancreatic activity.

(1) The suprarenal glands and the nervous moiety of the pituitary body in dogs contain something which, on extraction with salt solution and intravenous injection into dogs, cuts short the flow of pancreatic juice after the administration of secretin. It also prevents the stimulation of the gland by secretin if its injection precedes secretin.

(2) This feature has been found to date in no other tissues.

(3) It is independent of the general rise in blood pressure seen after the intravenous injection of adrenalin and pituitary extracts.

(4) The inhibitory factor of extracts of the suprarenal glands seems to disappear by decomposition, oxidation or other process before the blood-pressure-raising element is gone. It would appear that the suprarenal and the pituitary bodies have at least one property other than those qualities generally recognized as present in them.

[W. B. R.]

JOURNAL OF MEDICAL RESEARCH.

JUNE, 1908.

1. *CRILE, G. W., AND BEEBE, S. P. *Transfusion of Blood in the Transplantable Lymphosarcoma of Dogs.*
2. *GAY, F. P., AND SOUTHARD, E. E. *Further Studies in Anaphylaxis. 1. On the Mechanism of Serum Anaphylaxis and Intoxication in the Guinea Pig.*
3. *GAY, F. P., AND ADLER, H. M. *On the Chemical Separation of the Sensitizing Fraction (Anaphylactin) from Horse Serum.*
4. *SMITH, T. *The Vaccination of Cattle against Tuberculosis.*
5. WALKER, E. L. *The Cultivation of the Parasitic Flagellata and Ciliata of the Intestinal Tract.*
6. OPHÜLS, W. *Some Interesting Points in regard to Chronic Nephritis.*

1. Crile and Beebe report on a series of experiments with transfusion of blood in transplantable tumors in dogs. They used a lymphosarcoma, as to the malignancy of which there seems to be little doubt.

Of the ten animals treated by transfusion, seven were completely cured; in two of the remaining there was marked effect from the transfusion, and only one died without showing any regression as a result of the exchange of blood.

It appears from their work that immunity may have two factors: First, a common factor possessed to some extent by any strong, healthy, vigorous animal, in some cases of sufficient activity to prevent successful inoculation with tumors; second, a specific factor which is developed by the growth and regression of tumors.

In regard to the conditions of transfusion which favor the regression of tumors, it is the opinion of the authors that the donor should be a strong, healthy animal, immune to the tumor and that a large replacement of the recipient's blood should be made, giving him from 25 to 50% more blood than is removed.

2. Gay and Southard report more work on the subject of anaphylaxis. They have done a number of experiments on the effect of horse serum on guinea pigs, which are reported in full.

These experiments add further evidence in favor of their theory to account for the phenomenon of anaphylaxis, that increased susceptibility in the sensitized animal is due to the continued presence in the circulation of an unneutralized element of horse serum (anaphylactin) which acts as an irritant or stimulant to the body cells and in some way causes them to assimilate overrapidly certain other elements of horse serum. These assimilated or toxic elements are the same as those eliminated, without producing intoxication, during the incubation period following the first dose. This over-assimilation after anaphylaxis is the cause of the intoxication.

The authors also show that the substance in blood of sensitive animals which causes sensitivity and transmits it to normal animals is not an antibody to horse serum, but some retained substance of horse serum and that the intoxication of sensitive animals by horse serum is not due to a toxic substance, formed of an antibody, plus antigen, and that moreover the reaction of intoxication takes place, not in the circulation of the animal, but in the prepared cells.

3. Gay and Adler have made an attempt to separate chemically the two substances in horse serum, which, according to the theory of Gay and Southard, play distinct and separate parts in the phenomenon of anaphylaxis, one a sensitizing and one a toxic substance.

They find that the successive proteid substances obtained by fractional precipitation with ammonia sulphate are less sensitizing and more toxic as more and more ammonia sulphate is added.

The first fraction obtained by one-third saturation (englobulins) is as highly sensitizing as horse serum; it is moreover wholly analogous to Gay and Southard's anaphylactin and is apparently a purely sensitizing substance without admixture of the toxic or assimilable elements of horse serum.

4. Smith reports on his work of vaccination of cattle against tuberculosis.

His plan was as follows: The cattle were divided into five groups. The first consisted of twenty-one calves vaccinated with seven different cultures of human tubercle bacilli, three animals being allotted to each culture. After two vaccinations with each culture one animal of each lot was tested with a virulent bovine culture to determine the degree of immunity attained. The rest were reserved to be exposed to natural infection.

The second group consisted of three animals treated with von Behring's "bovo-vaccine." Two of these were tested with the virulent bovine cultures.

The third group consisted of three animals treated with large doses of virulent bovine tubercle bacilli, killed by a temperature of 60° C. All of these were tested by inoculation later.

The fourth group comprised three animals vaccinated with an attenuated bovine culture.

The fifth group consisted of five control or unvaccinated animals used to measure the virulence of the test culture of bovine bacilli.

The cultures used were isolated by the writer and differed widely in age and source. They were injected subcutaneously. The article is accompanied by many tables which show graphically the results of the work, and the writer has given careful notes of the clinical condition of the animals and the autopsy findings. His conclusions are very interesting:

(1) Vaccination of calves with the human type of the tubercle bacillus is harmless. Cases in which injuries are said to have resulted from it may have been due to other concomitant affections, among which pneumonia is probably the most common. Persons trying vaccination should first assure themselves that the culture they intend to use belongs to the human and not to the bovine type of the bacillus.

(2) Vaccination with the human type of bacillus leads to a relatively high resistance to fatal doses of the bovine bacillus.

(3) Vaccination with a carefully tested, attenuated bovine bacillus may be as efficacious, even in a single injection, as the double vaccination with human bacilli. Such vaccination may be less dangerous to man than when human bacilli are used.

(4) The immunity conferred by vaccination, as hitherto practised, does not appear to be satisfactory as regards degree or duration. More evidence is needed with regard to these points.

(5) Insufficient immunity following vaccination may prove dangerous in giving rise to mild cases, after ordinary exposure in infected herds, which tend to discharge tubercle bacilli from small foci in the lungs.

(6) The immunity acquired by two vaccinations with human bacilli should be fortified by a subsequent injection of attenuated bovine bacilli.

(7) Investigation should be made looking toward the selection, by the injection of attenuated bovine bacilli, of races or breeds of cattle which possess naturally a high degree of resistance to tuberculosis. The capacity of different breeds to acquire a high degree of immunity should also be investigated.

(8) The survival of human and bovine bacilli in the lungs and udders of calves, vaccinated intravenously with them, should be more definitely determined.

(9) Vaccines may be easily and cheaply prepared in the form of suspension in fluids ready for injection

[W. B. R.]

THE PRACTITIONER.

JUNE, 1908

1. RANKIN, G. *Progressive Muscular Atrophy.*
2. MOYNIHAN, B. G. A. *Clinical Lecture on Suprapubic Prostatectomy.*
3. MONSARRAT, K. W. *Cholecystitis.*
4. CONNAL, J. G. *Diagnosis and Treatment of Empyema of the Maxillary Antrum.*
5. JOHNSTONE, R. J. *Case of Puerperal Eclampsia treated by Renal Decapsulation, with Some Remarks on the Treatment of Eclampsia.*
6. BELL, W. B. *Retrodeviations of the Uterus and Their Treatment.*
7. KAY, T. *Case of General Pneumococcal Peritonitis associated with Acute Pneumonia.*
8. TOMKINSON, J. G. *X-Rays in the Treatment of Cutaneous Tuberculosis.*
9. DON, A. *Case of Henoch's Purpura associated with Angioneurotic Edema.*
10. EMERY, W. D. *Review of Clinical Pathology.*

THE EDINBURGH MEDICAL JOURNAL.

JUNE, 1908.

1. BATTLE, W. H. *The Radical Cure of Femoral Hernia.*
2. PRINGLE, J. H. *Method of Operation in Cases of Melanotic Tumors of the Skin.*
3. SHERREN, J. *Remarks on Chronic Neuritis of the Ulnar Nerve due to Deformity in the Region of the Elbow-Joint.*
4. GIBSON, G. A. *Arterial Structure and Arterial Function.*
5. MELLAND, C. H. *The Rôle of Suggestion in Treatment.*
6. DON, A. *An Easy Method of Excising Piles.*
7. SHENNAN, T. *The Propagation of Plague.*
8. DIGHTON, C. A. A. *Termination of Pelvic Colon in Bladder; Imperforate Anus.*

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT. NO. 29.

JULY 16, 1908.

1. *BASSENGE. *Extraction of Typhoid Toxin by Means of Lecithin.*
2. *RITTER, J. *The Specific Treatment of Tuberculosis of the Lungs.*
3. *GLAESSNER, P. *The Use of Marmorek's Serum in Joint Tuberculosis.*
4. *KÖHLER, F. *Clinical Experiences with Marmorek's Serum in Sixty Cases of Pulmonary Tuberculosis.*
5. *PINKUSS, A. *Pancreatic Ferments in the Treatment of Cancer.*
6. *PFAHL. *Injuries by Lightning and Electricity.*
7. PERS, A. *The Surgical Treatment of Sciatica.*

1. Bassenge, from Brieger's laboratory, proposes a new way to extract typhoid toxin which promises to be of great value. The principal difficulty in the way of procuring an effective serum against typhoid has been the fact that the sera obtained after the injection of dead bacteria prove bacteriolytic but not antitoxic, and the endotoxins becoming free in the circulation produce symptoms of poisoning. Bassenge has found that lecithin in 1% emulsion causes solution of the typhoid bacilli and that the liquid thus obtained is toxic to a far greater degree than any other bacterial extracts thus far obtained. The injection into animals of this toxin causes a high degree of immunity in guinea pigs within twenty-four hours, and the negative phase, during which the animal is more susceptible than before to infection with typhoid bacilli, is absent. (This negative phase is present after inoculations with killed typhoid cultures after Wright's method.) In the near future we may expect that this toxin will be used for the immunization of man against typhoid and that an antitoxic serum of high potency will be forthcoming for the treatment of typhoid in man.

2. Ritter, of Hamburg, reports the results obtained with the tuberculin treatment of phthisis in 554 cases. Old tuberculin was used in 352, Koch's bacillary emulsion in 140 and the bouillon filtrate of Denys in 52 cases. In general a favorable effect was observed and the writer warmly recommends its use in suitable cases.

3 and 4. Glaessner reports from Hoffa's clinic favorable results from the use of Marmorek's serum in bone and joint tuberculosis in a small series of ten cases. The administration was either subcutaneously or by the rectum. Several cases, however, did not improve or grew worse while receiving the serum.

Köhler, on the other hand, was unable to obtain good results with Marmorek's serum in 60 cases of pulmonary tuberculosis. His patients were mostly apparently in the second stage of the disease, and while many of them were temporarily improved, the physical signs in the chest were often not affected and in only one case did the tubercle bacilli disappear from the sputum. In fifteen cases the patients grew worse under treatment. The writer's results with Marmorek's serum in phthisis are, therefore, not to be compared with the results obtained in similar cases by the use of tuberculin.

5. Pinkuss treated fourteen cases of cancer of the uterus with trypsin and amylopsin and was unable to perceive any objective evidence of a favorable action. In a few cases, to be sure, there was found post mortem a marked softening within the tumor which may possibly be ascribed to the action of these ferments.

6. This article by Pfahl is a report of a number of cases of injury caused by lightning and by electric shocks. The principal lesions noted besides burns of the skin were nervous symptoms of a functional nature and changes in the eye grounds principally affecting the circulation. In one case there was separation of the retina and almost complete blindness of the right eye, followed by optic neuritis of the other eye. [W. T.]

No. 30. July 23, 1908.

1. *v. Pirquet, C. *The Behavior of the Cutaneous Tuberculin Reaction during Measles.*
2. Schultz, W., and Chiarolanza, R. *Investigations on Proteolytic Antiferment.*
3. Hampeln. *On Mitral Stenosis.*
4. *Ehrmann, R. *A Case of Severe Diabetes following Syphilitic Infection.*
5. Fogh, R. *A Case of Very Prolonged Suppuration of the Femur following Typhoid.*
6. *Bornhaupt, L. *The Operative Treatment of Acute Pancreatitis.*
7. Kirsch, E. *Rachitis and Scoliosis.*
8. Talat. *A Case of Universal Favus.*

1. Pirquet has confirmed the observation of Preisich that the tuberculous cutaneous reaction if positive becomes extinguished during the course of measles. Out of 24 cases which gave a positive reaction at other times, the reaction was negative in all on the fourth day after the eruption of measles. The reaction became less pronounced a day or two before the outbreak of the eruption and usually began to return on about the fifth day. The presence of a positive skin reaction during the presence of an eruption therefore excludes the diagnosis of measles. The absence of a positive reaction in cases which had previously reacted would point to the diagnosis of measles in a doubtful skin infection. Pirquet believes that the absence of the reaction during measles is connected with the fact that pre-existing tuberculosis often spreads after an attack of measles.

4. Diabetes has often been described as the result of syphilis, but the causal connection between the two has seldom been so clear as in the case described by Ehrmann. The symptoms of diabetes were first noted at the time the rash broke out and were severe. There was great loss of weight, polydipsia and large amounts of sugar in the urine (8%). Mercurial treatment was without effect on the glycosuria. Within a week, however, of the institution of strict diet, the glycosuria disappeared and toleration for carbohydrates was soon established, so that two months later even alimentary glycosuria was not to be detected.

6. Bornhaupt reports a case of acute pancreatitis with operation on the first day and complete recovery. The favorable result is attributed partly to the early operation and partly to the fact that only the head of the pancreas was involved. The presence of sugar in the urine greatly facilitated the diagnosis, which was correctly made before operation. [W. T.]

No. 31. July 30, 1908.

1. *Casper. *Remarks on the Diagnosis of Tuberculosis of the Kidney.*
2. Wechselmann and Meier, G. *Fixation of the Complement in a Case of Leprosy.*
3. *Seidel, C. *The Treatment of Septic Diseases with Enemata of Collargol.*
4. Dörrien. *Suprascapular Paralysis.*
5. *Münter. *Pneumococcus Infection of the Stomach.*
6. Oelsner. *Difficult Removal of Tracheotomy Tubes.*
7. Mintz. *A Peculiar Case of Progressive Lateral Deviation of the Jaw due to Muscular Weakness.*
8. *Scheidemandel. *Pyelitis in Women and its Relation to Menstruation.*
9. Zimmermann, V. *Pfannenstiel's Laparotomy Incision.*

1. In this article Casper, the noted genito-urinary surgeon, describes the routine examinations which he employs previous to nephrectomy for tuberculosis, and reports several illustrative cases. The presence of tubercle bacilli in the urine is proved either by microscopic examination or by the inoculation of guinea pigs. In the latter case, Bloch's method is employed, which gives results within two weeks. In case tubercle bacilli are demonstrated, the kidney is almost always the primary seat of the disease. The question as to whether the other kidney is functionally sufficient is determined by a comparison of the urines obtained by catheterization of the ureters. He compares the urines from the two kidneys after the injection of phloridzin and indigo-carmine and from these data and a comparison of the freezing points and the percentages of urea and albumen, he determines which of the two kidneys is more diseased and whether the other kidney will probably be able to perform the function of both. For cases in which cystoscopy and catheterization of the ureters is impossible, he recommends the following method to determine at the time of operation whether two kidneys are present and whether the remaining kidney is sufficient. He injects .01 gm. phloridzin just before the operation and .08 gm. indigo-carmine when the kidney has been exposed. The ureter is now clamped off, the bladder washed out and the urine, which now comes, of course, only from the other kidney, is collected and examined. If sugar appears within 16 to 20 minutes and the blue color of the urine within 8 to 12 minutes, if the blue color is intense and albumen is absent altogether or present only in traces, this kidney is functionally sufficient and the diseased organ may be removed.

3. Seidel, from Credé's clinic, warmly recommends the use of collargol in the form of enema for the treatment of all forms of bacterial infections. After a cleansing enema of soap and water, he administers from ⅓ to 5 gm. of collargol in 2 to 5% solution. In over 100 cases of in-

fections of various kinds, he claims to have seen marked benefit and cure in case the treatment was begun early. He reports in some detail 8 of these cases. The article is not convincing and it should be noted that other observers have not been able to obtain the results with collargol which Credé has claimed.

5. Münter reports a case of phlegmonous gastritis in which the pneumococcus was the causative organism. This was the only localization of the pneumococcus in the body. This case is the first of phlegmonous gastritis in which the pneumococcus has been reported.

8. Acute primary pyelitis is a disease which has aroused much interest of late. Scheidemandel gives a clinical description of it, based on 16 cases. His observations agree in the main with those of Lenhartz. The clinical course bears quite a close resemblance to that of pneumonia, commencing with a chill and high fever and often terminating by crisis. The characteristic feature of the temperature chart lies in the marked tendency to relapses, which are almost as frequent as in relapsing fever. Usually the disease is unilateral at first and the other kidney is attacked later. In two instances, however, Scheidemandel was able to prove by means of catheterization of the ureters that there was also a latent infection of the apparently sound kidney from the beginning. The differential diagnosis may be difficult without examination of the urine, for there is often general abdominal pain and tenderness, simulating general peritonitis or appendicitis. In such cases localized tenderness at the costo-vertebral angle is of great diagnostic importance. The disease shows a very marked tendency to relapse at the time of menstruation, usually about three days before its beginning. This is probably due to hyperemia at the time of ovulation, for in several of his cases the relapse occurred three days before the time when menstruation was expected, but did not appear. The infection was due in all cases to the colon bacillus and was considered to be an ascending infection from the external genitalia. Surgery is never indicated except in the more severe cases of pyonephrosis. Temporary occlusion of the ureter may cause a tumor the size of a child's head, but this usually subsides in a few days under the use of warm applications. Urotropin and kindred drugs are of little use unless there is also irritation of the bladder. A mild diet with care for the bowels and the free use of mineral water or hot linden tea led to a cure in all the writer's cases. [W. T.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT. No. 29.

JULY 21, 1908.

1. Deutschmann, R. *A Substantial Improvement in the "Deutschmann Serum."*
2. *Conradi, H. *A Procedure for the Demonstration of Rare Typhoid Bacilli.*
3. *Giemsa, G., and Prowazek, S. *Further Investigations on the So-Called Ultramicroscopic Infectious Agents.*
4. Best. *Myopia and its Prevention.* (Continued article.)
5. Hegar, A. *Hermaphroditism in Man.*
6. Cramer, A. *Hopes of the Psychiatrist for Reform in the Administration of Criminal Law.* (Continued article.)
7. Löwy, H. *The Treatment of Acute Coryza.*
8. Thon. *Volar Dislocation of the Ulna complicated with Typical Fracture of the Radius, with Ulnar Paralysis.*
9. v. Sury, K. A. *Case of Suicide during Labor.*
10. Leick, B. *Stenosis of the Pulmonic Valve produced by Trauma.*
11. Klingelfuss, F. *Measurement and Dosage of Röntgen Rays in Absolute Units. Röntgenolysis.*
12. Holzknecht, G. *A New Use for the X-Rays.*
13. Schott. *The Question of Acute Cardiac Overexertion.* (Answer to F. Moritz in No. 25 of the *Münchener Medizinische Wochenschrift.*)
14. Moritz, F. *Remark on the Above Article.*
15. Oberndorfer. *Obituary Notice on Eugen Albrecht.*
16. Schütt, E. *Relations of the Physician in Australia.*

2. The newer media brought forward in the last few years have made the recognition of rare typhoid bacilli in stools much easier, but none has been absolutely accurate. The best of them are the malachite green. Drigalski, Conradi and endoplates. Conradi describes a new medium made by adding 1% picric acid and 0.1% crystalline brilliant green (tetra-ethyl-diamedo-triphenyl-carbinol sulphate) to 3% agar. In this medium the characteristic shape and appearance of the typhoid and paratyphoid colonies is kept, while the agglutinating power of the bacilli is not lost, as in the malachite green medium. This method has been thoroughly tested, over 5,000 tests having been made in stools and urine with nearly 500 positive results for typhoid or paratyphoid bacilli. The whole procedure in getting out the bacilli does not take over twenty hours and is much finer than any heretofore reported.

3. Giemsa and Prowazek have been able, by using a vacuum filter coated with agar, celloidin or gelatin, to procure from emulsions of organs of fowl infected with chicken plague a filtrate which was non-infective when injected into other animals. They have then been able to filter out, in their ultra filter, this ultra-microscopic organism. Immunizing tests with the precipitate were absolutely negative. [R. D.]

No. 30. JULY 28, 1908.

1. *Moritz, F. *The Milk Cure for Obesity.*
2. *Blümel, K. *Collapse Induration of the Right Apex in Chronic Obstruction of Nasal Breathing and its Differential Diagnosis from Tuberculosis of the Lungs.*
3. Hart, C. *The Occurrence and Significance of Retrograde Lymph Flow in the Region of the Left Venous Angle.*
4. Gilbert, W. *Treatment of Blennorrhea of the New-Born with Cow Serum.*
5. Müller, F. *Sarason's Ozet Baths.*
6. Klopstock, F. *Artificial Sulphur Baths.*
7. Heile. *The Operations and After-Treatment of Cancer of the Breast.*
8. Loew, O. *The Physiology of Acclimatization.*
9. Hirschfeld, F. *The Korell Milk Cure and Under Nutrition in Disturbances of Compensation.*
10. Latzel, R. *Capacity of Growth of Boas-Kaufmann Bacilli in the Stomach Contents.*
11. Best. *Myopia and its Prevention.* (Conclusion.)
12. Cramer, A. *Hopes of the Psychiatrist for Reform in the Administration of Criminal Law.* (Conclusion.)
13. Eversbusch, O. *Professor Dr. Herman Snellen, Sr.* (*Obituary Notice.*)

1. During the last half year Moritz has used the milk cure for obesity. Nothing but milk is given, from 2½ to 1¼ liters per diem. The amount should be gauged by the symptoms of the patient, i. e., too rapid loss of weight, hunger, etc. He finds this method the easiest and most comfortable for both patient and physician. It is also the cheapest. The individual case can be more carefully treated than in any other way. Hunger is not often a symptom and is easily controlled. Thirst is almost never present. The milk régime is especially valuable in cases with disturbances of heart or kidneys, as the symptoms of these conditions become much better as the loss in weight progresses.

2. A typical condition of the lungs is found in patients with nasal obstruction, first described by Krönig. Pathologically it is a fibrous induration, with collapse and shrinking of the right apex. It may be differentiated from tuberculosis by the clinical course and absence of tubercle bacilli. The negative results of all tuberculin tests (subcutaneous, skin, conjunctival) should be most suggestive. The cause is inhalation of dust, setting up catarrh of larynx, pharynx, trachea and bronchi, resulting from the nasal trouble. The apices of the lungs are involved earlier than the other parts of the lung on account of anatomic structure. [R. D.]

BERLINER KLINISCHE WOCHENSCHRIFT. No. 28.

JULY 13, 1908.

1. Oppenheim, H. *Brain Surgery.*
2. Wohlgemuth, J. *The Hemolysin contained in Human Pancreatic Juice. Second Communication.*
3. *Hart, C. *Peri-arteriitis Nodosa.*
4. Weiland, W. *Salt Solution and Sugar Infusions in the Infant.*

5. Cohn, S. *Complement-Fixing Antibodies in Tuberculosis and Their Relations to the Tuberculin Reaction.*
6. Vohsen, K. *Method of Trans-Illumination of the Cavities of the Upper Jaw and Forehead.*
7. Federmann. *The Diagnosis and Treatment of Acute Peritonitis.*
8. Alexander, S. *Epidemics and Their Prevention.* (Continued article.)
9. Baginsky, A. *The Most Recent Diphtheria Epidemic and the Serum Treatment.* (Concluded.)

3. Hart reports the case of a nineteen-year-old girl who developed a post-scarlatinal heart lesion and died. The autopsy revealed a general peri-arteriitis nodosa, with involvement of the media and inflammatory increase of the adventitia. In places over the nodes thrombosis had occurred. The process apparently begins in the media and spreads thence to the adventitia. The fact that no aneurysm was found is remarkable. [R. D.]

No. 29. July 20, 1908.

1. Heubner. *Skin Gangrene in Rheumatoid Arthritis following Scarlet Fever.*
2. Uhlenhuth and Xylander. *Antiformin, a Bacterio-Decomposing Antiseptic.*
3. Brieger, L., and Trebing, J. *Further Researches on the Antitryptic Power of Human Serum, Especially in Cancer.*
4. *Krause, F. *The Question of Brain Puncture.*
5. *Korff, B. *Contributions to Morphin-Scopolamin Narcosis.*
6. Schmidt, H. E. *The X-Ray Treatment of Seborrhea Oleosa.*
7. *Silberberg, L. *The Isolation of the Eberth-Gaffsky Bacilli in the Cerebrospinal Fluid in Typhoid Fever.*
8. Alexander, S. *Epidemics and Their Prevention.* (Conclusion.)
9. Schroeder, K. *Investigations of the Guaiac Test for Blood.*
10. Schumm, O. *Reply to the Above Paper.*
11. Hildebrandt, A. *The Surgical Treatment of Basedow's Disease.*

4. Krause reviews a few of his experiences with the Niesser-Pollack brain puncture as a diagnostic aid. In certain cases it is of value, but it should never be used when a trephining operation is sure to follow, and should be practised only with the greatest care, for the danger of hemorrhage is very great, also of spreading infection when such exists. The shock resulting from brain puncture is often more severe than that following trephining.

5. Korff speaks in very high praise of scopolamin-morphin narcosis. He finds it as useful in severe, long operations as in milder ones. If the scopo-morphin narcosis is not deep enough at time of operation, a few drops of chloroform usually suffice to cause complete narcosis, which lasts as long as necessary. The writer recommends giving veronal 1 gm. on the day before the operation, in 0.5 gm. doses. Three hours before the operation a sterile solution containing 0.0004 gm. scopolamin and 0.01 gm. morphin is injected subcutaneously. This dose is repeated in an hour and, if the sleep is not deep enough, again in another hour. The drug has no untoward action on heart, lungs or kidneys; in fact, can act as a heart stimulant. It also has the great advantage of gently quieting the patient, so that much of the nervous strain incident to a major operation is removed.

7. The Eberth-Gaffsky bacillus is found fairly often in the cerebrospinal fluid in typhoid fever. The fluid itself has only weak agglutinating powers and differs in no chemical or physical properties from the normal cerebrospinal fluid. The bacilli seem to be of somewhat lessened virulence when recovered from this source. The lumbar puncture in these cases was often followed by lessening of the cerebral symptoms. [R. D.]

No. 30. July 27, 1908.

1. Hofbauer, J. *Outlines of an Antiferment Treatment of Cancer.*
2. Sticker, A. *The Influence of Atoxyl and Extraneous Albumin on Malignant Tumors.*
3. Falk, E. *Injections of Placental Blood in Cancer.*
4. v. Bergmann and Bamberg. *The Significance of Antitrypsin in the Blood.*
5. Brieger, L. *Removal of Fat and Water in Extreme Obesity.*
6. Citron, J., and Reicher, K. *Investigations of the Fat-Splitting Power of Syphilitic Sera and the Significance of Lipolysis in the Sero-Diagnosis of Lues.*
7. Wolff-Eisner, A. *Experiments with Several Derivatives of the Tubercle Bacillus.* (Continued article.)
8. Casper. *The Treatment of Prostatic Hypertrophy.*
9. Overbuch, M. *Allophanic Acid and its Significance in the Chemistry of Drugs.*
10. Diesselhorst, G. *Lead Excretion after Internal Use of Lead Acetate.*
11. Kanasagi, H. E. *Dehiscences of the Antrum.*

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Correspondence.

INCISION THROUGH INFECTED SKIN.

Boston, Aug. 28, 1908.

Mr. Editor: A recent operation has brought to my mind a half-forgotten maneuver which worked well in this instance and may be of service to others in like case.

It was an operation for fracture and irreducible malposition of the surgical neck of the humerus. As a result of two weeks' confinement in futile apparatus the whole convexity of the shoulder was dotted with small pustules, through or between which the cut must be made, and the chance of breaking one or the other pustule was grave. Then there came to me an idea, derived, I think, from some of my teachers in surgery, I do not know from whom, and I called for contractile collodion, flooded the whole shoulder with it, and after it had dried performed a second corrosive and alcohol sterilization, then made the required incision, avoiding, of course, the direct incision of any pustules. There was no subsequent sepsis whatever.

The trick is not new, I think, but perhaps worth calling to the mind of others facing the like problem, — a problem not uncommonly presenting itself to those of us who interest ourselves in bettering the bad results of early fracture treatment. The same trick is no less applicable to those common cases where abdominal infections come to operation after a vain treatment with over-hot poultices, turpentine stupes, etc., so applied as to cause blisters or pustules.

Truly yours,

F. J. Cotton, M.D.

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MR. H. F. MILLS AND "HAZEN'S THEOREM."

Boston, Sept. 10, 1908.

Mr. Editor: The editorial in the Journal of Aug. 27, under the title, "Typhoid Fever and Hazen's Theorem," is likely to create an incorrect impression as to the real discoverer of the very interesting facts which have been thought to be of sufficient importance to justify a personal name.

The Lawrence city filter was built in accordance with plans prepared by H. F. Mills, C. E., of the State Board of Health, and was completed in the year 1893. Mr. Mills very soon noticed that the community was not only receiving relief from its previous high death-rate from typhoid fever, but also from other diseases which had not even a diarrheal character. In 1896 he made a communication upon this subject to his associates upon the board of health. In July, 1902, he made a public address upon the same subject before the city government of Lawrence.

His remarks were printed at length in the Lawrence *Telegram* and other newspapers, together with a very suggestive diagram prepared for the purpose of showing the sanitary results of the operations of the city filter through a series of years. Mr. Mills had also taken notice of similar results from the operation of the filter at Albany, N. Y., and of the driven wells which are the source of water supply for the city of Lowell.

The whole story is summed up in the concluding sentence of Mr. Mills' printed address: "The decrease in deaths has not been limited to deaths caused by diseases which are known to be conveyed by water, nor to infectious diseases, but include so broad a range of diseases that we must conclude that the general health of the people has been improved and their ability to resist and overcome disease has increased."

It is safe to say that no man now living has made such valuable and far-reaching observations in the field of the removal of water pollution or drawn therefrom wiser conclusions than Mr. Mills has done and no one of the eminent scientific men associated with him in the work of the Lawrence station would for a moment be willing to do anything that would seem to diminish Mr. Mills justly earned pre-eminence there.

Henry P. Walcott, M.D.
Chairman Massachusetts State Board of Health.

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LONDON LETTER.

[*From our Special Correspondent.*]

Age at which Accidents Occur. Hour of Working Day in which Accidents Occur. The Mortality of Occupations. The Care and Control of the Feeble-Minded.

London, England, Aug. 20, 1908.

Mr. Editor: Recent legislation in this country, under the titles of the Employer's Liability Act and the Workmen's Compensation Act (this latter includes domestic servants), has given rise to much litigation turning upon medical evidence as to the accidental origin of morbid conditions. On the question of hernia, for example, the public is possessed of the notion that accident is a common cause; judges, too, share the idea that a rupture is generally the outcome of injury, and no amount of expert testimony to the contrary has any effect.

Incidentally, some interesting statistics have come out. Sir John Brunner, of Brunner, Mond & Co., who employ on an average 3,848 men above eighteen years of age, has examined the question as to the age at which accidents occur and comes to the conclusion that "the reduction in comparative liability to accident is in exact relation to the increase of steadiness due to increase of age," and that, therefore, there is no ground for dismissing workmen as they get into years on account of compensation risks. Calculating for fifteen years in the case of four of their works, and eight years for one, the statement runs as follows:

Ages.	Number of Men.	Percentage of Accidents per Annum.
18–25,	633	8.5
26–30,	533	6.8
31–35,	616	4.2
36–40,	656	3.6
41–45,	531	2.8
46–50,	382	3.7
51–55,	251	2.4
56 and over,	246	2.4

It is to be noted that the lessened liability begins from the beginning, not at the age at which men may be excused from dangerous work on account of lessened activity.

Whilst these figures relate to accidents of all sorts, including even the most trivial, results not very dissimilar are furnished by the actuaries of the indemnity associations. Here are some figures for fatalities among colliers:

Age.	Number of Accidents.	Percentage.
Under 20,	28	10.2
20–30,	75	27.9
30–40,	62	22.8
40–50,	55	20.3
50–60,	37	13.7
60 and over,	14	5.1

The greatest number of non-fatal claims also is made between the ages of twenty-one and thirty, but since the age-constitution is not given, the figures are not so valuable as Sir John Brunner's. As bearing upon the desirability of an eight hours day for miners, a committee of investigation "failed to obtain any evidence which would associate the number of accidents in any disproportionate degree with the hours in excess of eight spent underground." Over a period of six years in one colliery where the working hours are long it was found that the greatest number of accidents occurred in the first and sixth hours and that the ninth and tenth hours were relatively free. Perhaps there is a psychological explanation of the first-hour accidents, for it is a common experience of those engaged in dangerous occupations that they have to exercise greater self control then than when they have "settled down" to work.

A statistical report on the mortality of occupations has just been presented by the registrar-general, dealing with the years 1900–01–02. It contains an enormous mass of detailed information, and I shall only refer to a few points of special interest.

The satisfactory decline in total mortality during the last ten years is not equally distributed over all the age periods; the earliest occupational period, from fifteen to twenty-five, has shown a steady decline of mortality-rate, whilst within the limits of the main working period of life the death-rates have changed irregularly. Diseases of the respiratory system, pneumonia, phthisis, influenza; nervous, heart and digestive diseases; rheumatic fever and gout, — these and accident all show diminished mortality; whilst alcoholism, diabetes mellitus, Bright's disease and suicide all show increase. The most marked increase, however, is for "cancer," which shows an excess of over 25% on the last returns.

Decline in mortality from phthisis has been very general and is observable even in those groups such as clergymen, who had a very low rate before; increase has been noted among general shopkeepers, some miners and unoccupied males.

Some curious anomalies appear. Lawyers, who have a very low general mortality figure, have a mortality from diabetes mellitus nearly three times the average. Maltsters, who suffer very lightly from most forms of disease, have a very high figure for influenza. Chimney-sweeps are still subject to the highest mortality from cancer, although the figure has declined considerably, and cancer of the scrotum, penis, testis and groin (sweep's cancer) still accounts for over 30% of the cases.

It would be easy to multiply such isolated curiosities indefinitely. Whilst four and five occupations have to be added to the list of those with mortality from alcoholism more than 50% above the standard, only one has been taken off since the last report (1890–1–2). During the ten years the mortality from alcoholism among hairdressers has declined by a half!

"It is significant," says Dr. Tatham, "that in the great majority of cases excessive mortality from alcoholism is accompanied by a high mortality from other diseases." To arrive at a true appreciation of the mortality from alcoholic excess, he considers it advisable to include fatalities from diseases of the liver with deaths recorded directly as from alcohol.

In the occupations involving the breathing of dust-laden air, there has been greater diminution of mortality than the standard, but less than that observed among agriculturists; cutlers and tin miners actually show an increase of phthisis mortality.

The effects of chronic lead poisoning have been curtailed in all occupations liable except painters and plumbers, who are, for the most part, engaged by small employers of labor with whom the necessary precautions are less easily enforced than in extensive works. Investigations of mortality among occupied females have yielded no useful results, chiefly because after marriage certificates fail to show the original occupation.

The report of the Royal Commission on the care and control of the feeble-minded, whilst it has primarily to do with administration, is not entirely devoid of interest to medical men. Besides persons "of unsound mind," idiots and imbeciles, persons "mentally infirm," i. e., those who from age or decay of their faculties are incapable of managing themselves or their affairs; "feeble-minded," or those who are incapable from mental defect existing from birth or an early age (*a*) of competing on equal terms with their normal fellows, or (*b*) of managing themselves or their affairs with ordinary prudence; "moral imbeciles," and mentally defective epileptics, inebriates and deaf and dumb are included in one category for legislative proposals. It may be mentioned that it is proposed to drop the term "lunatic" as not only repellant, but actually a hindrance in administration. The total number of persons falling under the above definitions is estimated at 271,607, or 0.83% of the population for England and Wales. The commissioners state that there are numbers of mentally defective persons whose training is neglected, over whom no sufficient control is exercised, and whose wayward and irresponsible lives are productive of crime and misery, of much injury and mischief to themselves and to others, and of much continuous expenditure, wasteful to the community and to individual families. Their proposals deal in a broad spirit with the whole question; they find that many certified insane do not require the expensive hospital treatment they now get and that, on the other hand, many not certifiable are nevertheless "exposed to constant moral danger to themselves and become the source of lasting injury to the community." All this latter class is to be brought under the supervision and control of the state. It is estimated that 0.59% of children on the school registers are in need of suitable provision on these grounds. The relation between epilepsy and mental defect is so close, say the commissioners, that it is not possible to make provision for sane epilepsy separately; all cases will, therefore, be under the supervision of the Board of Control and its committees.

Exception has been taken to the statement of the commission that "both on the grounds of fact and of theory there is the highest degree of probability that 'feeblemindedness' is usually spontaneous in origin; that is, not due to influences acting on the parent, and tends strongly to be inherited." It appears, however, that by "origin" they mean only the first occurrence in a line of individuals; they consider it a spontaneous variation and of course transmissible; it is a germinal variation and not an environmental modification.

Whilst they recognize the great importance of limiting procreation by mentally defectives, they approve what they consider to be the general feeling of the public that no artificial measures should be taken to prevent propagation. They are familiar with the evidence as to fertility of such persons, but seem to think segregation will be a sufficient safeguard.

The Royal College of Surgeons has enrolled as an Honorary Fellow, M. Lucas-Championniere. He is well known in London, and the election would be a popular one, quite apart from the present Gallophile sentiments. *C.*

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUGUST 29, 1908.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	—	—
Chicago	584	252	Waltham	2	1
Philadelphia	—	—	Pittsfield	6	3
St. Louis	—	—	Gloucester	11	5
Baltimore	172	58	Brookline	4	—
Cleveland	—	—	North Adams	5	4
Buffalo	—	—	Chicopee	9	5
Pittsburg	—	—	Northampton	7	2
Cincinnati	—	—	Medford	5	—
Milwaukee	—	—	Beverly	2	1
Washington	—	—	Leominster	4	1
Providence	—	—	Hyde Park	4	0
Boston	228	105	Melrose	2	1
Worcester	35	12	Newburyport	—	—
Fall River	54	27	Woburn	3	2
Cambridge	20	9	Westfield	3	—
Lowell	53	27	Marlboro	2	0
Lynn	22	11	Revere	5	4
New Bedford	36	19	Attleboro	4	0
Springfield	19	5	Peabody	—	—
Lawrence	25	14	Adams	4	4
Somerville	16	4	Clinton	5	1
Brockton	13	6	Gardner	4	2
Holyoke	17	9	Milford	—	—
Malden	12	4	Watertown	3	1
Chelsea	17	1	Plymouth	—	—
Newton	—	—	Weymouth	4	2
Salem	7	3	Framingham	3	1
Haverhill	12	6	Southbridge	1	1
Fitchburg	6	2	Wakefield	—	—
Everett	9	3	Webster	—	—
Taunton	14	5	Arlington	3	2

CHANGES IN THE MEDICAL CORPS, U. S. NAVY FOR THE WEEK ENDING SEPT. 5, 1908.

MAYERS, G. M., passed assistant surgeon. Granted sick leave for three months when discharged from treatment at the Naval Medical School Hospital, Washington, D. C. Aug. 28, 1908.

ELY, C. F., passed assistant surgeon. Detached from the "Hartford" and ordered to the "Charleston." Sept. 1, 1908.

MORAN, C. L., assistant surgeon. Detached from the Naval Recruiting Station, Dallas, Texas, and ordered to course of instruction at the Naval Medical School, Washington, D. C. Sept. 3, 1908.

HAYWARD, A. B., assistant surgeon. Detached from the Marine Recruiting Station, Pittsburg, Pa., and ordered to the Naval Recruiting Station, Dallas, Texas. Sept. 3, 1908.

RECENT DEATHS.

DR. L. P. BARCLAY, of the class of 1896 Harvard Medical School, died on Sept. 1 at the Loomis Sanatorium, Liberty, N. Y.

WALTER JULIAN SLEEPER, M.D., M.M.S.S., died in Westford, Aug. 8, 1908, aged forty-eight years.

BOOKS AND PAMPHLETS RECEIVED.

Die Theorie, Praxis und Resultate der Serumdiagnostik der Syphilis. Von P. Fleischmann. Reprint.

The Treatment of Pulmonary Tuberculosis by a Postural Method. By A. T. Tucker Wise, M.D., M.R.C.S., L.R.C.P. Reprint.

The Submerged Tonsil with Special Reference to Cervical Adenitis and Systemic Infections. By Lee M. Hurd, M.D. Reprint.

An Insane Hospital Annex Reformatory and Sanatorium for Insanoids or Semi-fous. By C. H. Hughes, M.D. Reprint.

The Principles and Practice of Gynecology. By E. C. Dudley, A.M., M.D. Fifth edition, revised and enlarged. Illustrated. Philadelphia and New York: Lea & Febiger. 1908.

Manual of Psychiatry. By J. Rogues de Fursac, M.D. Authorized translation from the French by A. J. Rosanoff, M.D. Second edition, revised and enlarged. New York: John Wiley & Sons; London: Chapman & Hall, Ltd. 1908.

Text-Book of Physiological Chemistry in Thirty Lectures. By Emil Abderhalden. Translated by William T. Hall and George Defren. New York: John Wiley & Sons. 1908.

Sanatoria for Consumption and Certain Other Aspects of the Tuberculosis Question. Supplement to the Thirty-fifth Annual Report of the Local Government Board, 1905–6. London. 1908.

Cholécysto-Pancréatite. Essai de Pathogénie. Par le Docteur Reine Maugeret. Paris: G. Steinheil. 1908.

The Ready Reference Handbook of Diseases of the Skin. By George Thomas Jackson, M.D. Sixth edition, thoroughly revised. Illustrated. New York and Philadelphia: Lea & Febiger. 1908.

Gynecology and Abdominal Surgery. Edited by Howard A. Kelly, M.D., F.R.C.S. (Hon. Edin.), and Charles P. Noble, M.D., S.D. Illustrated. Vol. II. Philadelphia and London: W. B. Saunders Co. 1908.

Diseases of the Skin and the Eruptive Fevers. By Jay Frank Schamberg, A.B., M.D. Illustrated. Philadelphia and London: W. B. Saunders Co. 1908.

Oxford Medical Publications. Diseases of the Spinal Cord. By R. T. Williamson, M.D. (Lond.), F.R.C.P. Illustrated. London: Henry Frowde; Hodder & Stoughton. 1908.

Oxford Medical Publications. Glandular Enlargement and Other Diseases of the Lymphatic System. By Arthur Edmunds, M.B., M.S., B.Sc. (Lond.), F.R.C.S. (Eng.) Illustrated. London: Henry Frowde; Hodder & Stoughton. 1908.

Treasury Department. Public Health and Marine-Hospital Service of the United States. The Present Pandemic of Plague. By Assistant Surgeon-General J. M. Eager. Washington. 1908.

Oxford Medical Publications. The Law in General Practice. Some Chapters in Every-Day Forensic Medicine. By Stanley B. Atkinson, M.A., M.B., B.Sc. London: Henry Frowde; Hodder & Stoughton. 1908.

Surgical Technique without the Use of Antiseptics; with Report of Forty-one Consecutive Successful Abdominal Operations. By William H. Dukeman, M.D. Reprint.

Original Articles.

NON-TUBERCULOUS BONE INFECTIONS ABOUT THE HIP-JOINT. A CLINICAL AND ROENTGENOLOGICAL STUDY.*

BY ARTHUR T. LEGG, M.D., BOSTON,
Junior Assistant Surgeon, Children's Hospital,
AND
ARIAL W. GEORGE, M.D., BOSTON,
Roentgenologist to the Children's Hospital; Assistant in Anatomy, Harvard Medical School.

It is our intention to present a few cases of non-tuberculous bone infections about the hip-joint, believing that there are many such cases going through hospital clinics unrecognized and treated as tuberculosis of the hip-joint, and believing that the early recognition of non-tuberculous affections is of the utmost importance, both in the treatment and for the welfare of the patient.

We feel that great harm has been done in the diagnosis, and especially in the treatment, by using the term "hip-disease" to designate all conditions that attack the hip-joint, and accepting the term "hip-disease" to mean tuberculosis.

All textbooks use the term "hip disease" to signify tuberculosis of the hip, very little mention being made of non-tuberculous bone infection about the hip-joint. The consequence is that the practitioner considers a patient presenting himself with symptoms referable to the hip-joint to have "hip disease," and this to him means *tuberculosis.* Such a case which may be suffering from a simple traumatic condition of the muscles, synovitis, fracture, sarcoma, functional joint affection, infectious arthritis and at times from coxa vara and valga, may be treated as tuberculosis of the hip as a routine.

It is with this thought in mind that the writers hope that the term "hip disease" will be discarded and a more careful and scientific nomenclature and classification of affections about the hip-joint, the exact *pathological* condition and *location* of such a process, be made.

During the last two years, in the Out-Patient Department of the Children's Hospital, a more careful classification has been attempted, and many cases which were considered tuberculous joint disease have proved to be pyogenic bone infections, which, with the appropriate treatment, have been cured in much shorter time than had they been tuberculous, and with little, if any, ultimate deformity. The Roentgen ray has been invaluable in carrying out this work.

The cases we shall present are of pyogenic bone infections resulting in acute or chronic osteomyelitis, varying in no detail as to the recognized conception of osteomyelitis as to the pathological process. This class is taken as it is most commonly mistaken for tuberculous hip-joint disease, and on account of the importance of its early recognition as regards treatment and the ultimate result. That this class of cases is much larger than is generally supposed is evidenced by Konig's collection of 678 cases of hip-joint infections coming to autopsy. Of these, 568 were tuberculous and 110 acute infectious coxitis, or about one to seven. In Brun's collection about the same proportion existed.

Pyogenic infection of the bone, though it may occur in the epiphysis, most commonly takes place in the diaphysis. Becker states that he has found the proportion of infection in the epiphysis to that of the diaphysis to be one to four.

Osseous infection of the tubercle bacillus, on the other hand, occurs in the epiphysis with but few exceptions. One of these occurs in children at an age when there is no osseous epiphysis; another, by direct infection from a focus in the epiphysis.

Clinically, the symptoms of acute pyogenic infections *outside* the hip-joint, namely, acute onset, rapid thickening of the neck, trochanter or upper shaft, pain, spasm and constitutional symptoms with high white count, will generally easily differentiate this class from tuberculosis. The differential diagnosis of the chronic cases, those produced by a low-grade organism, is, however, much more difficult from a clinical standpoint. The deformity, limitation of motion, spasm and atrophy may be the same as that seen in tuberculosis of the hip. Thickening is felt earlier than in tuberculosis and the white count is considerably higher than we find in uncomplicated tuberculosis. There may be no more constitutional symptoms in this class of cases than is seen in tuberculosis.

Of all points in the physical examination of cases referable to the hip-joint, *rotation* is of the greatest importance. In cases with a focus outside the hip-joint, rotation may be free, limited or even absent. If any is present, however, it will have the normal quality, while, where any change has taken place in the articular cartilage, the rotation, if present, has a peculiar characteristic quality.

In the acute pyogenic infections *within* the joint we have classical symptoms of acute joint infection, acute onset, rapid joint distention, pain, constitutional disturbance and high white count.

The sub-acute or chronic cases, those starting in the epiphyseal line or as a general joint infection, may differ in no respect clinically from tuberculous hip disease. These will generally clear up much earlier than tuberculosis, with possible perfect function. This type will show an ultimate permanent lengthening from the irritation of the epiphyseal cartilage.

It is thus seen that although acute extra- and intra-articular pyogenic bone infections may be made clinically, the subacute or chronic cases cannot, early at least, be differentiated from tuberculosis. Here we must use the Roentgen ray to show the exact location and the extent of the process.

PATHOLOGICAL PROCESS AS DEMONSTRATED BY ROENTGEN METHOD.

First apparent infection of periosteum. Second apparent infection of marrow.

Periosteum. — In acute infections by a pyogenic organism outside the joint capsule, the infection may start with a direct infection of the periosteum, so that we may have the appearance on the plates of definite thickening of the periosteum or proliferation, or a ragged periosteal outline.

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* Presented to the Boston Orthopedic Club, October, 1907.

Marrow. — It is with infections of the marrow that we see in the Roentgenographs a disturbance of the normal shadow or record of densities of part of the bone, with an area or areas varying in size from the smallest possible point to an area of the size of a quarter or multiple areas varying in size. We find that the ray easily penetrates these points and we have then the so-called "punched out" appearance, or areas of increased radiability.

In the chronic cases of pyogenic infections we see definite areas of actual bone destruction, with or without periosteal reactions, usually with proliferation of the periosteum. This depends to a great extent on the proximity to the joint capsule. Sequestrum formation may or may not take place, but commonly the bone is thickened and the periosteum is proliferated to a great extent, forming an involcrum about the shaft with an area of rarefaction with sequestrated pieces of bone in the center of these areas. Sometimes the bone becomes very dense, and only here and there by careful examination can areas of rarefaction be detected. These areas of suppuration will surround the sequestrum.

One of the first manifestations of an infection by the tubercle bacillus is atrophy of the size of the bone. This occurs long before a definite focus of disease is discernible either by the eye or the Roentgenographs. As has been stated, the epiphysis of the long bones, or acetabulum, is first infected and it is detected, by means of the Roentgen ray, as a small area or areas of increased radiability. This area slowly increases in size and shows the atrophy of the bone about the infected point, so that the shadow-producing qualities of the bone are reduced to that of its surrounding soft parts.

At times the only noticeable change from the normal is in the marked atrophy of size without evidence of bone destruction and at times with an infiltration of tissue and capsule with abscess formation. The tubercle bacilli will not cause periosteal reaction and this is only seen in the Roentgen examination where there has been a mixed infection.

REPORT OF CASES.

Case I. I. S. Twenty-six months. Case came to the Children's Hospital, Out-Patient Department, April 23, 1907. History of pain, limp and swelling about the right hip for one week. Right hip showed 45° permanent flexion. No motion in hip. Much spasm. A large indurated area behind the great trochanter, extending half way down the thigh, was present. She was immediately sent into the house with the diagnosis of osteomyelitis of femur. White count 28,000.

April 27, 1907. Operation by Dr. Lovett.

An abcess was opened containing about one pint of pus, the abcess cavity extending from the neck of the femur half way down the shaft. No bare bone was found. The cavity was washed out and wicked. The culture from the pus showed staphylococcus pyogenes aureus. The temperature which had been running to 101 or 102 fell to normal. She was sent to Wellesley in two weeks, where the wound, after draining two weeks, healed and the motions of the hip became free.

July 10, 1907. She was again admitted to the hospital with a slight discharge from the sinus. The thigh down to the knee showed a marked bony thickening.

July 24, 1907. Operation by Dr. Stone.

The anterior portion of the whole shaft was removed. The wound soon healed and although some thickening of the shaft persists, the motions of the hip are free.

Case II. H. F. Eighteen months. Came to the Children's Hospital, Out-Patient Department, Dec. 21, 1906. History of a fall two weeks previous. Pain and limp for one week. Left hip seemed very sensitive. There was limitation of motion, but a satisfactory examination was impossible on account of the child being badly frightened. The mother was told to keep the child in bed for one week and report.

The mother did not bring the child until April 9, 1907, when the hip showed no permanent deformity.

Motion in flexion to 60°. Abduction free. Adduction to 15°. Internal rotation free. No outward rotation possible. There was an indurated area the size of a lemon just below the anterior superior spine.

Roentgenogram having been taken, operation was advised.

May 17, 1907. Operation by Dr. Lovett.

A small abscess was opened anterior to the great trochanter. The periosteum was found thickened. Under this a sequestrum was found extending into the neck of the femur. This was removed and the cavity carefully cleaned, dried and filled with a plug of spermacetti, iodoform and oil of sesame. Pus showed no growth on culture media. The sequestrum microscopically showed an acute inflammatory process. The wound healed by first intention.

July 2, 1907, the hip showed no limitation of motion. There was considerable thickening just below the anterior superior spine with deep fluctuation. Operation was again advised and refused. The child went under the care of the family physician.

Case III. M. L. Nine years. Was sent to the Children's Hospital from another hospital on Sept. 15, 1907, having been treated there for one month. She had had pain of the left hip for three weeks previous to her entrance to the other hospital, following a blow.

She had been treated by traction.

On entrance to the Children's Hospital she showed considerable thickening of the upper end of the left femur, which was very tender. Motions limited in all directions by muscular spasm. The left shoulder and axilla were swollen and tender. No fluctuation.

Sept. 20, 1907, an incision was made in the anterior axillary line, but no pus was found. Smears from the serous fluid showed staphylococcus pyogenes aureus. The left knee became swollen and tender but quieted down under cold applications.

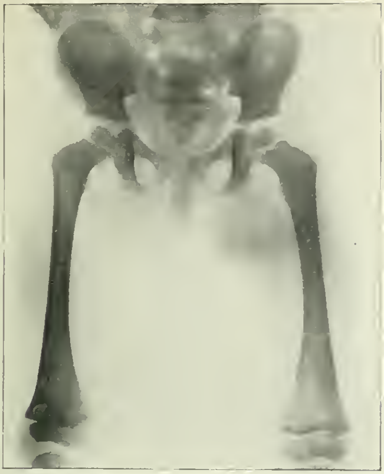
Roentgenogram showed destruction of the upper shaft of femur.

Oct. 8, 1907. Operation by Dr. Thorndike.

A Huntington operation was done, curetting out all the necrotic bone found. The acute symptoms immediately quieted down and she was sent to Wellesley with only a slight discharge from sinus.

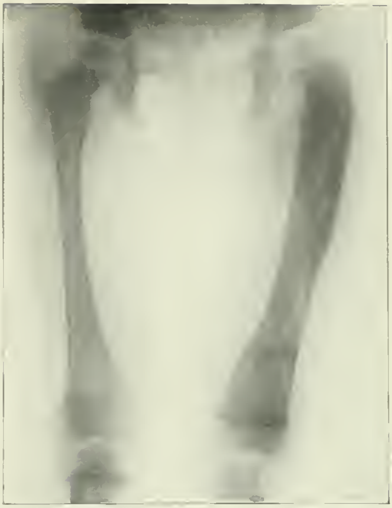
In March, 1908, she returned to the Out-Patient Department with slight discharge from the sinus. Slight limitation of motion was present. The Roentgen examination showed involvement of the periosteum extending down the femur and she was again recommended to the hospital, but no further treatment was carried out as she was taken to Italy.

Case IV. M. W. Three years. Was admitted to the Children's Hospital Feb. 25, 1907, with history of



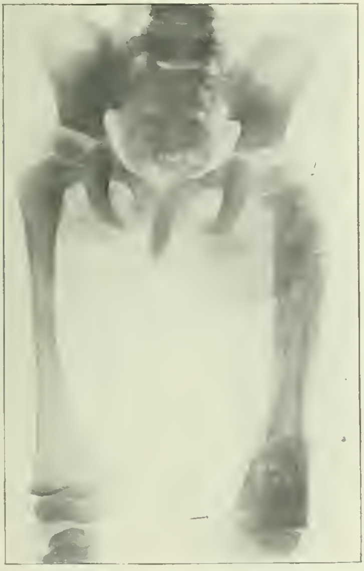
A. W. George, M.D.

CASE I. I. S. PLATE I, showing area of decreased radiability of the subcutaneous tissues and muscles. Outline of the bone hazy. The cortex not so well defined as normal. No disturbance of the epiphysis.



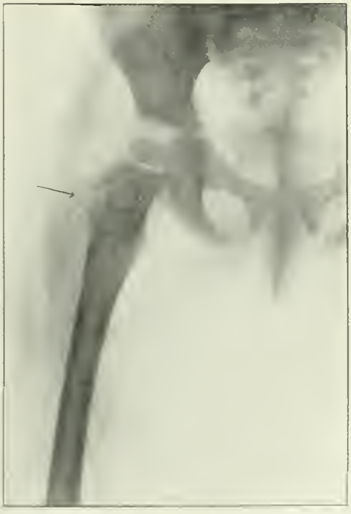
A W. George, M.D.

CASE I. I. S. PLATE III. Six months after operation, showing new bone formation of whole shaft of femur. No disturbance of the femoral epiphyses.



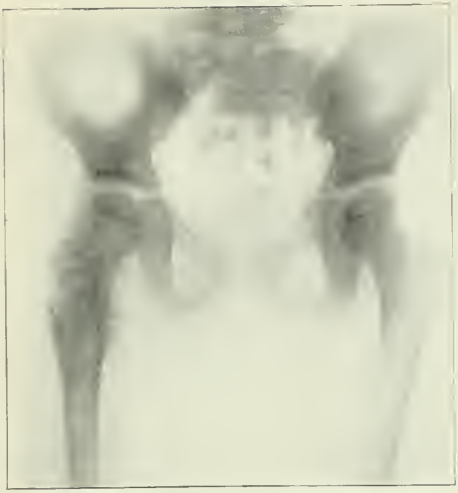
A. W. George, M.D.

CASE I. I. S. PLATE II. Nine weeks later. *1.* Area of suppuration. *2.* Newly-formed periosteal bone. *3.* Necrotic cortical bone. Arrows show points of attachment of capsule and periosteum to shaft of femur. Hip and knee-joints not involved. Infection confined within limits of periosteum.



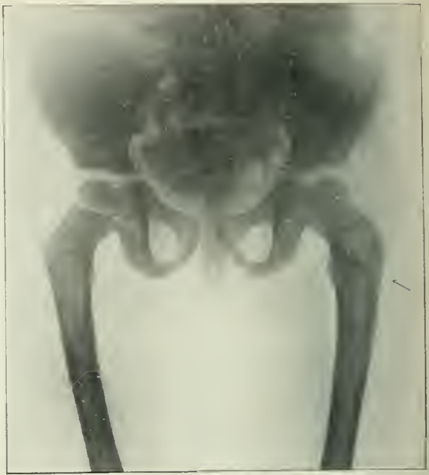
A. W. George, M.D.

CASE II. H. F. Showing area of bone destruction just below great trochanter. No atrophy of shaft or disturbance of epiphysis.



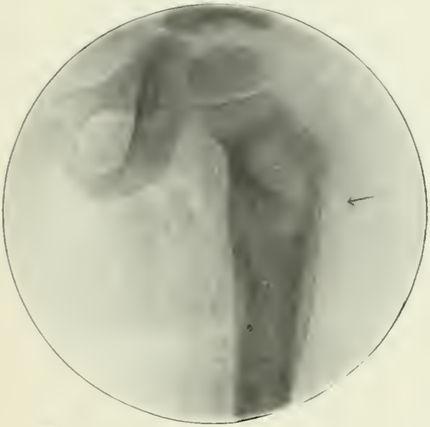
A. W. George, M.D.

CASE III. M. L. Showing considerable destruction, with periosteal proliferation in region of neck and upper shaft of femur. No disturbance of epiphysis.



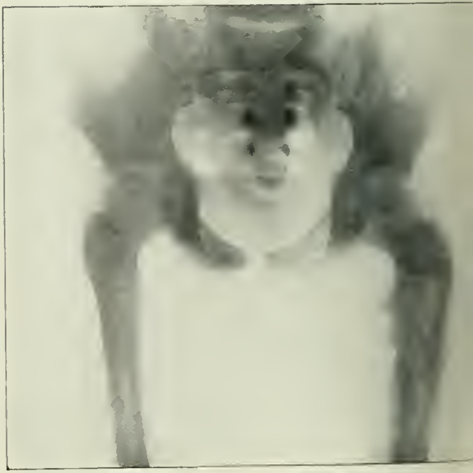
A. W. George, M.D.

CASE IV. M. W. PLATE II. One month after operation, showing healing of the necrotic area. Very little remaining periosteal thickening.



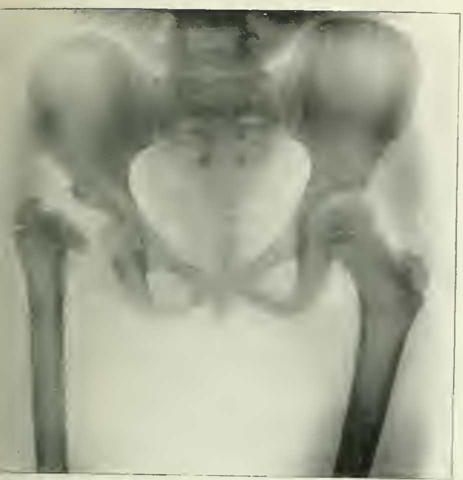
A. W. George, M.D.

CASE IV. M. W. PLATE I. Showing periosteal reaction in region of neck and upper shaft of femur with area of bone destruction. No disturbance of the epiphysis.



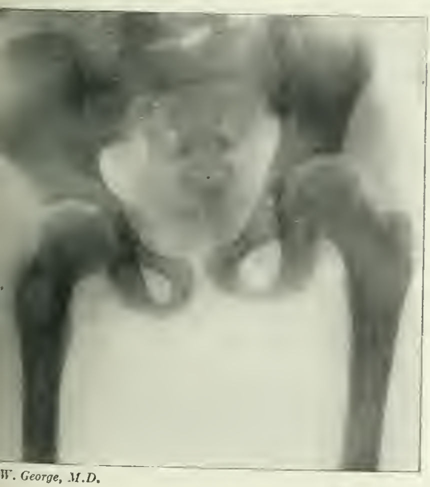
A. W. George, M.D.

CASE V. E. S. Showing marked periosteal proliferation of neck an upper third of shaft of femur, with bone necrosis and sequestrum formation No involvement of the epiphysis.



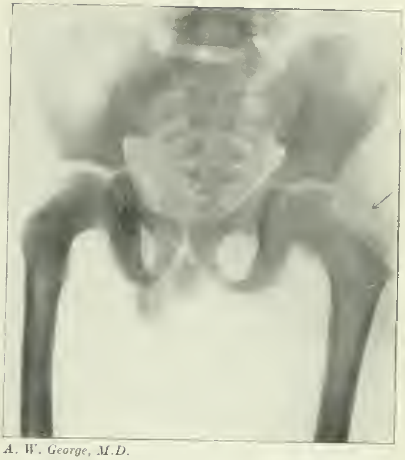
V. George, M.D.

ASE VII. B. G. Showing an actual loss of the epiphysis and part of neck of the femur, with irregularity of the acetabulum due to an early e non-tuberculous infection.



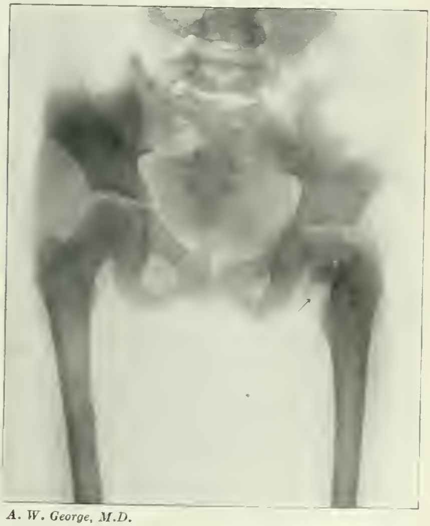
W. George, M.D.

ASE VIII. H. G. Showing an area of bone destruction at the ction of the neck and shaft. No disturbance of the epiphysis.



A. W. George, M.D.

CASE X. F. M. Showing abscess in the tissue about the hip-joint with beginning disturbance of the periosteum of the neck of the femur.



A. W. George, M.D.

Plate showing process about neck of femur practically healed, following a chronic non-tuberculous condition. No operation.

pain and limp of right leg for two months. Right leg showed motion in flexion to 90°. Slight rotation possible. Abduction and adduction free, much spasm. The upper half of the thigh showed marked thickening, most marked behind the great trochanter, where there was a tender flucutating area about 2 inches in diameter.

Feb. 26, 1907. Operation by Dr. Bradford.

The fluctuating area was incised and several ounces of pus evacuated. The periosteum over the great trochanter was much thickened. Upon incision of the periosteum a necrotic bone area about the size of an olive was found and curetted out. Culture from the pus showed pneumococcus.

Wound healed in three weeks. Motions of hip became normal.

Case V. E. S. Eight years. Came to the Children's Hospital, Out-Patient Department, Nov. 20, 1905. History of limp of right leg and night cries for three months. Right hip showed 30° permanent flexion.

Motion in flexion to 90°; motion in abduction to 10°; motion in adduction to 20°.

There was much thickening about the great trochanter and a discharging sinus at this point. Two inches atrophy of right thigh. One-half inch atrophy calf. He was immediately sent into the house with the diagnosis of osteomyelitis of femur.

White count 12,000. He ran an irregular temperature not above 102. His general condition was very poor and he was sent to Wellesley. He returned to the hospital, Feb. 4, 1906. At this time there was about the same limitation of motion and considerable discharge from the old sinus. There was a general fusiform enlargement of the right femur.

Feb. 6, 1906. Operation by Dr. Brackett.

The anterior half of the upper two thirds of the femur was removed. The medullary cavity was filled with cheesy, purulent material. He ran an irregular temperature up to 103. Culture showed staphylococcus pyogenes aureus. The wounds discharged for about two months and the motions of the hip became normal.

Case VI. J. C. Five years. Came to the Children's Hospital, Out-Patient Department, Feb. 20, 1906. History of pain and limp of right leg for two weeks. Right hip showed permanent flexion of 85°. Slight permanent outward rotation. Extreme spasm prevented all motions. No thickening about the trochanter. There was some spasm of the abdominal muscles of the right side suggesting a possible appendix. He was sent to the house where with traction the permanent deformity disappeared and considerable motion returned.

White count 18,000. A hip-splint was applied and he was discharged to the Out-Patient Department.

July, 1906. No permanent deformity, no adduction or abduction. Rotation one half normal. No thickening. Very slight spasm.

Jan., 1907. Motions became perfectly free. The Roentgenogram in this case in Jan., 1907, showed an obliteration of the epiphyseal line by new bone formation showing the case to have been an epiphysitis.

Case VII. B. G. Eighteen months. Came to the Children's Hospital, Out-Patient Department, Oct. 21, 1901. History of pain and limp of left leg for one week.

Left leg showed 40° permanent flexion; left leg showed 15° permanent abduction.

There was no motion in the hip and much spasm. There was thickening about the great trochanter and glands in the groin. She was sent to the house where a Taylor hip-splint was applied and then sent to the Convalescent Home.

Feb. 10, 1902, she returned to the Out-Patient Department. No permanent deformity. Motion in flexion to 80°; motion in abduction 35°; motion in adduction 25°. Rotation only slightly limited. Considerable thickening about the trochanter.

July 9, 1902, she showed 45° permanent flexion. Sixty degrees of flexion. Rotation only slightly limited. Very sensitive. Thigh swollen in upper two thirds. Fluctuating area just below the great trochanter.

July 15, 1902. Operation by Dr. Bradford.

A large abscess cavity was opened, extending from the anterior superior spine half way down the thigh. A counter incision was made at the lower border of the abscess cavity. Cavity irrigated and tubes inserted. The culture from the pus showed staphylococcus pyogenes aureus.

Tubes omitted Aug. 9, and she was sent to Wellesley, where the abscess discharged for two weeks. She has now free motion in the hip with ¼ inch shortening.

Case VIII. H. G. Four and one-half years. Came to me March 17, 1908. History of having an acute wry neck, lasting four or five days, the first of December, 1907. Two weeks later he had pain in the left knee followed by limp. Examination showed 20° permanent flexion of the left hip. Motion in abduction 45°.

No adduction possible. No rotation possible. Considerable spasm. There was a point of tenderness just befow the anterior superior spine. The Röntgenogram showed a necrotic area to the inner side of the great trochanter. Operation advised. White count 14,400.

March 19, 1908. Operation by Dr. Legg.

A three-inch incision was made over the great trochanter and a dissection down to the bone was made. The trochanter appeared normal. To its inner side the cortex was softened, allowing easy entrance to the medulla. The necrotic area of bone was carefully curetted out. The cavity was swabbed with iodine and the wound closed, leaving in a cigarette wick. This was removed in forty-eight hours. The wound healed immediately. The sutures were removed on the eighth day and a plaster spica applied. He was allowed to walk on the fourteenth day with a high sole and crutches.

There was no growth on culture media. A guinea pig was inoculated, which showed no evidence of tuberculosis at the end of six weeks.

The plaster spica was allowed to remain on twelve weeks, at which time the motions of the hip were perfectly normal. The Röntgenogram at this time showed the cavity to have nearly disappeared by new bone growth.

Case IX. M. S. Six years. Came to the Children's Hospital, Oct. 14, 1905. History of pain and limp of right leg for two weeks following a fall upon this side. Right hip showed 20° permanent flexion; 10° permanent abduction. There was much pain and very little motion in the hip. There was a marked tender bogginess about the trochanter. Was recommended to the house with diagnosis of acute infection about the hip. White count 13,800.

Oct. 17, 1905. Operation by Dr. Brackett.

Incision on outer side of the great trochanter was made. Periosteum found elevated. Upon incising this, a pus cavity containing about an ounce of pus was found. Just below this was a necrotic bone area the size of a walnut. This was thoroughly curetted and washed out with carbolic acid, followed by alcohol. Culture from the pus showed staphylococcus pyogenes aureus.

The wound discharged for six weeks.

Perfect motion returned by March, 1906.

The Roentgen examination before operation showed an area of increased radiability in the neck of the femur the size of a quarter.

Case X. F. M. Four years. Came to the Children's Hospital. April 13, 1907. History of pain and limp of right leg for two months. Frequent night cries. Unable to walk. Right hip very sensitive, with no motion. Large tender and fluctuating area about the great trochanter. The diagnosis of osteomyelitis was made and she was sent into the house.

April 16, 1907. Operation by Dr. Lovett.

An abscess containing about ten ounces of pus was opened. No opening in the bone was found. The culture from the pus showed staphylococcus pyogenes aureus. After evacuation of abscess, motion of the hip became nearly normal and the acute symptoms subsided. The abscess discharged for about three months.

At the end of five months the motion became normal with no pain or tenderness.

Secondary pyogenic infection from a primary tuberculous lesion is, of course, possible. To rule out this possibility, guinea pigs were inoculated by pus or necrotic material, in all cases coming to operation. At the end of six weeks they showed no evidence of tuberculosis.

In conclusion, little need be said of the early diagnosis of these acute pyogenic infections except its importance in demanding operative interference.

In chronic cases of pyogenic infection with symptoms identical with symptoms of tuberculosis of the hip, we believe that we should hesitate in making a differential diagnosis when, after careful observation, if destruction is taking place, operative interference is demanded, in the meantime, of course, keeping the cases under protective treatment.

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AN ANALYSIS OF THE SYMPTOMS IN FORTY CASES OF SUPPURATION OF THE KIDNEY OR KIDNEY PELVIS.*

BY ARTHUR L. CHUTE, M.D., BOSTON.

All men who do much cystoscopic work are, I think, impressed with the number of renal suppurations they find in which the history and the other means of examination, with the exception of cystoscopy, show little to direct one's attention to the kidney.

The fact that there are present in some cases few or none of the symptoms commonly recognized as indicative of renal suppuration is, I am sure, responsible for a more extensive destruction of the relatively non-resistant renal tissue than would otherwise be permitted.

With this in mind I have gone over my demonstrated cases of renal suppuration to ascertain what symptoms they have shown, and to find out more particularly in what proportion the signs that I believe are very commonly looked for in suspected cases of renal suppuration, and quite often depended upon for making that diagnosis, have been lacking. A few of my cases I have been unable to include in this analysis through a failure on my part to make a sufficiently full record at the time; there remain, however, 40 suppurative cases in which the record is sufficiently complete to be of use for this purpose. This series of cases includes 15 cases of pyelitis, 12 of renal tuberculosis, 5 of pyelonephritis, 5 of pyonephrosis, 2 of calculous pyelonephritis, and 1 of abscess of the kidney. The observations have the advantage that all have been made by one observer.

I have gone over and tabulated these cases as to the presence of pain, the presence or absence of a renal mass, whether tenderness could be elicited and whether renal casts were found, points which in my experience are largely depended upon in determining whether a given suppuration is of a kidney or of the bladder. I have also noted whether these patients had any disturbance of urination and whether the bladder gave cystoscopic evidence of being diseased. I have finally noted the diagnosis and my reason for arriving at that conclusion. As all these patients presented a turbid urine, varying more or less in degree, no individual reference has been made to this fact.

I will first take up the matter of pain in the loin or back in these 40 cases. This came from the history and was in no way influenced by the personal opinion of the writer as to what might or might not be fairly considered pain. It was purely an expression of the patient's opinion on this subject. It was found that 23 patients had at some time suffered from pain in the loin or back, while 17 had not. Of the acute processes, all gave the history of pain; of the chronic processes there were 17 who gave a history of pain and an equal number who gave no history of pain. It may perfectly well be that those who did not complain of pain had had pain at some time but had forgotten about it. Against this perhaps is the fact that in several of these patients the history was of pain quite a number of years before. It is, however, not important to us to know whether these 17 patients actually never had any pain, or whether they had forgotten about it. What is important is that in 34 suppurations that might be considered subacute or chronic, one half made no complaint of pain in the loin or back. In passing, it is of interest to note that one of the patients who did complain of pain referred it to the well, or at least the better, kidney. This phenomenon is sometimes put down to a reflex of some sort, but is more usually ascribed to compensatory hypertrophy. I believe this latter is probably the true explanation. Pain in the well kidney, as well as tenderness and increase in its size, I have most often seen in tuberculous cases, and I think it is very difficult in these cases to rule out the possibility of a small cortical focus, which does not connect with the renal pelvis and, therefore, does not give a turbid urine, the cardinal symptom of a renal suppuration. It is on the absence of a turbid urine in such cases that one draws his conclusion that the painful kidney is normal.

When one considers the question of a renal mass, one comes to something in which the personal equation undoubtedly plays a large part. In these cases I have put down as a "mass" practically every kidney that I could feel more plainly than I felt I should be able to, as well as those that showed a considerable increase in size. In these 40 cases I found a mass, using the term in the sense defined above, in 11 cases. I should describe 3 of these 11 cases as acute and 8 as chronic or quiescent. In 2 cases the kidney that was not diseased, so far at least as I was able to determine, was the one that felt enlarged, due undoubtedly to compensatory hypertrophy. In 5 of the 11 cases showing a mass, I was able to verify the presence of an enlarged kidney at operation. The rest of the 11 cases did not come to operation so far as I know. Of the 29 cases in which I was unable to make out any increase in size, there were 7 in which I found the kidney actually enlarged at the time of operation; in 2 it was very considerably enlarged. In most of these cases several examinations had failed to make out any increase in size.

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* Read before the American Urological Association in Chicago, June 2, 1908.

Renal tenderness in its lesser grades is even more difficult to determine than a slight increase in size. As there is no fixed standard of what one is justified in considering as tenderness, different observers will differ regarding the same case. It is possible to exert a degree of pressure in the flank of practically any person which will give the same discomfort that one would call tenderness if brought about by a lesser pressure. In this series of 40 patients I was able to get what I considered tenderness in 15 cases. All of the cases that I should call acute presented tenderness, as well as 9 that I should term quiescent. Two cases showed tenderness over the well kidney instead of the diseased one.

The number of cases in which renal casts were found is of especial interest, as it is my experience that the *not finding* of casts raises in the minds of many physicians a strong presumption against the probability of a given suppuration being of renal origin. In this series of patients, casts were found in 7 cases, while there were 33 cases in which they were not found. I believe that casts were undoubtedly present in a much larger proportion of these cases and would have been found had long and repeated search been made. However, as the specimens examined in these cases were almost without exception drawn by catheter and centrifugalized, I believe it gives a fair idea, not probably of the percentage that had casts, but of the percentage in which one is likely to find them. It is a striking example of the unreliability of " negative findings."

The quantity of albumin was not accurately determined in most of this series of cases, and no attempt has therefore been made to tabulate the amounts. It is of interest to note that in one case (22) with a very acutely suppurating pyelonephritis, the Esbach test showed but 4 per mille, or one fortieth of 1%.

In this series there were 6 cases in which urination might be considered normal and 34 in which it was either painful or abnormally frequent or both. The bladder showed involvement in 28 of these cases, though in a considerable proportion the involvement was trifling and limited to the region about one ureter. In the remaining 12 there was no involvement of the bladder that I could determine. In all the patients who had normal urination the bladder proved to be normal in appearance; on the other hand, 6 patients with normal-appearing bladders showed a disturbance of urination.

It is beyond the scope of this paper, which deals simply with suppurations of the kidney and kidney pelvis as a whole, to point out the frequency with which the various symptoms have appeared or been wanting in any particular type of disease. A reference to the accompanying chart will show this.

In summing up, I would call attention to certain facts which it is possible, perhaps even probable, that the tabulation of a larger series of cases might modify somewhat.

Less than one half of the patients in this series (42.5%) gave a history of lumbar pain.

In only a little more than one fourth (28.5%) could I make out any enlargement of the diseased kidney.

Tenderness was present in 38.5%.

Casts, on which some men place much importance, appeared in but 17.5%.

A very striking thing to me was the fact that 11 of these 40 cases (27.5%) presented neither pain, renal mass, tenderness nor casts.

From an analysis of these cases it appears that we have in suppurations of the kidney and kidney pelvis but one sign that is always present, that is, a turbid urine. The next most frequent sign, present in 85% of the cases, is a disturbance of micturition; both these symptoms also occur almost constantly in conditions limited to the bladder. There is a considerable proportion of renal suppuration (27.5% in this particular series) in which we get only these two signs.

This brings me to the points that I wish to emphasize: first, the lack of distinctive symptoms in many renal suppurations; second, the absolute unreliability of negative findings in these cases; last, the tremendous importance of the use of the cystoscope in the study of urinary suppurations.

THE NECESSITY OF DISINFECTION AFTER THE DEATH OR REMOVAL OF TUBERCULOUS PATIENTS.*

BY HENRY JACKSON, M.D., BOSTON.

At this time when so much money is spent and so much time is given to aid those suffering from tuberculosis, it is certainly wise to make exertions in every possible way to prevent the development of new cases. A very important branch of the work, now in thorough working order under the charge of Dr. Locke in the Municipal Tuberculosis Out-Patient Clinic at Burroughs Place, is careful search for signs of early tuberculosis in the families of those known to have the disease. Similar work is being done by the school inspectors and by the social workers connected with the Massachusetts

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*Read before The Massachusetts Medical Society, June 9, 1908.

ANALYSIS OF FORTY CASES

No.	Age.	Sex.	Pain.	Mass.	Tenderness.	Casts.
1	44	F.	On left	Present	Present	Found
2	40	M.	None	None	None	Found
3	43	M.	On left	None	Slight	None
4	39	F.	On left	Large	None	None
5	30	M.	On both sides	None	None	Found
6	43	F.	None	On both sides	Both sides	None
7	40	M.	None	None	None	None
8	45	M.	None	None	None	None
9	35	M.	On left	Slight	Moderate	None
10	35	F.	None	None	None	None
11	50	F.	On left	None	On left	None
12	19	F.	On left	Moderate	Present	None
13	41	M.	On right	Slight	Present	None
14	50	M.	Both sides	None	Slight on left	None
15	22	M.	None	None	None	None
16	42	F.	On right	Present	Present	None
17	37	F.	None	None	None	None
18	11	F.	None	None	None	None
19	33	M.	On left	None	Slight	None
20	35	M.	None	None	None	None
21	49	F.	Slight on right	None	None	None
22	53	M.	Right side	None	Present	Present
23	43	M.	None	None	None	Present
24	65	F.	On right	Present	Present	None
25	53	F.	On right	Moderate	None	None
26	68	F.	None	None	None	None
27	26	F.	On left	None	None	None
28	65	F.	On left	None	None	None
29	34	M.	On left	None	None	None
30	28	F.	None	Slight on right	None	None
31	50	M.	None	None	None	None
32	33	M.	On right	None	None	None
33	35	F.	On left	None	Slight	None
34	49	M.	Both sides	None	Both sides	None
35	24	F.	On right	Present	Present	Found
36	84	M.	None	None	None	None
37	37	M.	None	None	None	Found
38	24	F.	None	None	None	None
39	22	F.	None	None	None	None
40	36	F.	On left	None	None	None

OF RENAL SUPPURATION.

Urination.	Condition of Bladder.	Diagnosis.	Determined by
Frequent and painful	Very little involved	Left pyelonephritis	Nephrostomy
Slight frequency and pain	Slight cystitis	Left pyelitis	Ureter catheterization
Frequent and painful	Moderately involved	Left pyonephrosis	Nephrectomy
Normal	Normal	Double renal tuberculosis	Ureter catheterization
Normal	Normal	Double pyelitis	Ureter catheterization
Frequent	Involved	Double pyonephrosis	Nephrostomy. Autopsy
Frequent and painful	Involved	Right pyelitis	Ureter catheterization
Frequent and painful	Involved	Right pyelitis	Ureter catheterization
Painful	Some cystitis	Left pyelitis	Cystoscopy
Very frequent and painful	Moderate cystitis	Right renal tuberculosis	Ureter catheterization
Slight frequency	Normal	Left pyelitis	Ureter catheterization
Frequent and painful	Cystitis on left	Left renal tuberculosis	Nephrectomy
Slight frequency	Mild localized cystitis	Right pyelitis	Ureter catheterization
Moderate frequency	Normal	Abscess left kidney	Nephrostomy
Frequent urination	Moderately involved	Right pyelitis	Ureter catheterization
Very frequent and painful	Extensively involved	Right renal tuberculosis	Nephrectomy
Painful and frequent	Much involved	Left renal tuberculosis	Nephrectomy
Frequent	Normal	Double pyonephrosis	Cystoscopy
Very painful and frequent	Much involved	Left pyonephrosis	Cystoscopy
Normal	Normal	Right pyelitis	Ureter catheterization
Frequent	Slightly involved	Right pyelitis	Ureter catheterization
Frequent and painful	Considerably involved	Right pyelonephritis	Nephrectomy
Normal	Normal	Double pyelonephritis	Cystoscopy
Frequent and painful	Slight localized cystitis	Right pyelitis	Cystoscopy
Normal	Normal	Right pyelitis	Ureter catheterization
Frequent and painful	Slight cystitis	Right pyelitis	Ureter catheterization
Frequent and painful	Normal	Double renal tuberculosis	Ureter catheterization
Slight frequency	Normal	Left pyelitis	Ureter catheterization
Very frequent and painful	Markedly involved	Left renal tuberculosis	Nephrectomy
Frequent and painful	Much involved	Left renal tuberculosis	Nephrectomy
Normal	Normal	Right pyelitis	Ureter catheterization
Very frequent and painful	Much involved	Right renal tuberculosis	Nephrectomy
Frequent and painful	Moderately involved	Double renal tuberculosis	Nephrectomy on right
Frequent and painful	Marked bladder involvement	Double pyelonephritis	Ureter catheterization
Marked frequency	Slightly involved	Calculous pyelonephritis	Nephrolithotomy
Very great frequency	Much involved	Right pyelonephritis	Cystoscopy
Some frequency	Slightly involved	Calculous pyelonephritis	Nephrolithotomy
Some frequency and pain	Slightly involved	Left renal tuberculosis	Ureter catheterization
Marked frequency	Very slightly involved	Left renal tuberculosis	Ureter catheteriaztion
Slight frequency	Normal	Left pyonephrosis	Ureter catheterization

General Hospital and the Association for the Relief and Control of Tuberculosis.

The first necessary factor in giving relief is the knowledge of the existence of the disease, and this is obtainable in a small but an increasing number of the cases by registration. Tuberculosis is now placed by the board of health in the list of contagious diseases in which compulsory registration is required. In the year 1907, 2,619 cases were reported; though this is an improvement over past years, we readily see that only a small proportion of all cases were reported when we know that 1,138 died of tuberculosis in the year 1907. A very large proportion of the registered cases came from one or other of the following sources: the hospitals, the tuberculosis clinics or the board of health laboratory where sputum analyses are made. This leaves a very large number of cases existing in the city, in regard to which no reports are made. For this omission we as physicians must acknowledge that we are personally largely responsible, yet we are not responsible for all such omissions. Many persons who apply for an examination as to the presence of tuberculosis purposely give the wrong address to avoid publicity. We find a strong desire to avoid registration essentially in two classes of cases: First, in the well-to-do classes, who wish to prevent any publicity as to their condition on account of personal, family or social reasons. We cannot rightly have any sympathy for such reasons. Second, the very poor, who at best live in wretched lodging houses, dread to have their disease known of, as they are thereby driven from one house to another and often have great difficulty in finding any place in which they can obtain lodging. I know from the reports of social workers the great suffering inflicted upon the very poor from this reason. We must sympathize with these people; they are often of the ignorant class, cannot understand the reason for their forcible removal, and their suffering from the disease is indeed much more acute because of the fact that they are obliged to move from one wretched tenement to another. The latter class is by far the most dangerous and their itinerant life makes them a far greater menace to the public than is the case with individuals in better social circumstances who can live and die in one place.

The 2,619 cases reported in 1907 represent only a small part of the existent cases of tuberculosis in the city in that year; some statistics place the probable number of cases as ten times the number of deaths. The recent estimate of Dr. Locke that there are probably 10,000 cases of tuberculosis in the city of Boston suggests the possibility of the correctness of this estimate in that, in 1907, 1,138 persons died of tuberculosis in Boston. Of one fact we are sure, the number of deaths, and these in 1907 were 1,138. The cause of death must be reported and the place where the death occurred.

Our board of health orders an immediate disinfection of the premises after a death from tuberculosis and this is done in all parts of the city irrespective of the care taken by the patient or his friends during life. This is a most important advance in sanitary reform; important, as the authorities have definite knowledge of all deaths; important, because in the last days of illness the prevention of the spread of the disease by care of the individual is necessarily much limited, and in the absence of trained medical care and nursing is practically impossible. The disinfection is thorough: twenty (20) ounces of a 40% solution of formaldehyde are evaporated to every thousand (1,000) feet of cubic space in the room. This is accomplished by means of a copper regenerator by which the moist formaldehyde is forced through a keyhole The bedding and the clothes of the patient are spread about the room; all doors and windows are carefully sealed by strips of gummed paper. The room is left closed for twenty-four (24) hours. A strong solution of carbolic acid or bichloride of mercury is left by the man who does the disinfection; orders are given to wash the walls and floors with the disinfectant solution. The bedding is boiled. Practically, an improvement might be made if bulky articles could be removed to a central disinfecting plant, where useless articles could destroyed and such as were of value could be absolutely sterilized. The boiling of bedding is a difficult process at best where one has command of a large cooking stove, and cannot be considered in the house of the average individual.

Disinfection of rooms is undertaken by the board of health after every death; further, in quite a large number of cases, namely, after every removal to a hospital or other institution, and, in a small number of cases, where a patient is known to have changed his home.

The board of health now has accurate knowledge of all cases that apply to the various public clinics, and Dr. Durgin has made a special request to the hospitals for information as to the previous residence of such cases as have changed their residence shortly before removal to the hospital. This information is sought for to enable the board of health to more thoroughly disinfect all places occupied by the tuberculous.

In 1906 there were 1,933 places disinfected by the board of health; in 1907, with a record of 1,138 deaths, 2,050 places were disinfected. These statistics are encouraging, but show that much more may be done when systematic disinfection is carried out after removal of the patient to hospital or other sanatoria. In other places the value of disinfection is appreciated, as shown by the recent interesting report of the Holyoke Association for the Prevention and Relief of Tuberculosis. I quote from this their first report:

"On Feb. 4, 1907, the Holyoke Medical Association held a public meeting in Y. M. C. A. Hall. The topic for discussion was 'Tuberculosis' and Drs. Bliss, Dickson and Gabler read papers, covering the main facts relating to the history, cause, means of prevention and cure of the disease. So much interest was aroused at the meeting that a committee was appointed to plan for an antituberculosis organization in the city. On Feb. 22, 1907, a constitution was adopted and officers chosen for the ensuing year." Further on we read: "There have been 40 fumigations after death and removals where almost nothing has been done before last year."

In 1905 Dr. A. K. Stone, in conjunction with Mr. Alexander M. Wilson, at that time the secretary of the Boston Association for the Prevention and Control of Tuberculosis, wrote a paper on "The Geographical Distribution of Tuberculosis in Boston. (Boston Medical and Surgical Journal, Vol. clii, No. 1, pp. 6–9.) In this paper were shown the massing of the disease in certain sections of the city.

"The first thing of note on looking at Chart 1 is the situation of the plague centers, namely, the West End, the Cove and South Boston. Here the death-rate was over fifty per 10,000 inhabitants. The North End, Charlestown, Roxbury and Dorchester were not far behind, with a death-rate of 40–50. Only one portion of the city at that time showed a rate of under 1 per 10,000, and that was the west slope and top of Beacon Hill. Even the Back Bay at that time had a death-rate of nearly 20. The average death-rate from tuberculosis for the city during these six years was 36.12 per 10,000.

"Now all this has changed; there has been a distinct improvement throughout the whole city, the average rate for the past three years, 1901, 1902, 1903, having been 21.71 per 10,000, a noticeable gain."

These "plague centers" were not wholly dependent upon local infection, as shown by Dr. Stone, but were largely influenced by the class of people inhabiting certain sections of the city.

At the present time the Boston Association for the Prevention and Relief of Tuberculosis has under way a valuable investigation in regard to tuberculosis; namely, a home study of the various cases; Mr. Walter Kruesi, the secretary, has kindly shown me a few of their early reports and allows me to quote the following statistics from from their study of Ward 9.

In this ward they have found 774 cases, living in 602 houses:

In 101 houses, 2 cases in each house;
In 20 " 3 " " "
In 2 " 4 " " "
In 2 " 5 " " "

while six, seven and eight cases were each found in a house in one instance.

These statistics are supplied by a non-medical staff and refer to cases of well-marked pulmonary disease and do not include the many cases of latent tuberculosis that would probably be discovered by a careful medical examination of all members of the family of the individual patients.

Such statistics offer a strong proof of the necessity of local disinfection in our work to prevent the spread of tuberculosis.

DISCUSSION.

Dr. S. H. Durgin, of Boston: I want to express my pleasure at hearing the paper which has just been read and which has shown what is being done and what ought to be done. It has been very difficult work in getting the physicians of our city to report cases, and while, as your reader has said, there is some encouragement, that encouragement is not as rapid as it ought to be. It is not satisfactory by any means. I anticipated years ago, when we called for the report of these cases, that I should have slow work in getting them. In fact, I was told so by the physicians. However, it is encouraging that more cases from year to year are being reported and we are finding more and more ways in which to get hold of cases, not through physicians. All cases known to the board of health are seen and so far as may be the family is taught how to take care of the case to prevent the spread of the disease, and in any known removal of such cases we disinfect. With regard to those cases of removal, we certainly do not get half of the cases of removal reported to us, and within a short time we have made a regulation that all cases of removal shall be reported to us by the householder and he will be liable hereafter if he neglects to report to us cases of removal from his household. That will increase all immediate spread of the cases if known to the householder. It will correspondingly increase the number of disinfections also. In case of death we disinfect with formaldehyd gas, 40%, as soon as possible after the room has been vacated. We remove the household goods and disinfect with steam, which is always more effective upon things which will bear the steam, not all things will bear this, but we intend to so spread out the clothing as to enable our process to reach all parts. For places and things other than the room we leave a 5% carbolic solution. You will note the fact that the number of disinfections and the number of deaths do not exactly correspond with the total number of cases that are known to the board of health. This is accounted for by the fact that a great many of these cases go to the hospital and there die and we do not disinfect. In 1907 there were about 900 such cases sent to the hospital. Speaking of hospitals, we find a bed wherever it is possible, and as you all know, we are very much handicapped in that respect. There are perhaps eight or ten places where we find a bed now and then and we get a bed as often as possible and for only the worst cases. But we ought to have a great many more beds as well as a great many more things which cost money, and money comes high.

Dr. E. O. Otis, of Boston: The subject which Dr. Jackson has presented is one of the highest importance in the tuberculosis problem. Tuberculosis has been well called a house disease, and investigations made in crowded tenements and blocks, such, for example, as the well-known "lung block" in New York City, have shown that the disease is most prevalent where there is the greatest crowding, and as the number of persons living in one room increases, so does the disease. Moreover, it has been found that where tuberculosis occurs under such conditions it recurs again and again, evidently showing that house infection has much to do with the spread of the disease. Hence the supreme importance of thorough disinfection, particularly in the crowded, tenement-house sections of the city. Furthermore, in order to make the disinfection efficient, not only the room which the tuberculous individual has occupied should be disinfected, but all rooms in the tenement in which the patient has passed some of his time should be subjected to the same disinfection. In New York City not only the ordinary disinfection is required, but renovation; the wall paper is removed and the walls are recalcimined or whitewashed and the painted woodwork scrubbed with a solution of hot soda; all hangings, bedding, mattresses, etc., are disinfected with steam. In the same city no tenement is permitted to be occupied again, which has previously been occupied by a tuberculous patient, until it has been disinfected to the satisfaction of the board of health, and until this is done a notice is attached to such a tenement prohibiting its occupancy. In order to control tuberculosis in the tenement, where it is most prevalent, we must have the knowledge of its existence, by notification, and in this the board of health is dependent upon the physician, and the more faithfully he reports his cases the more efficiently the board of health can do its part in disinfection. The dispensaries, hospitals and particularly the visiting nurse can render valuable aid in this respect, and are so doing; knowledge of all the cases which occur in the congested districts of a city and thorough disinfection and renovation of the room or rooms where a case has existed are two essential conditions for the control and prevention of the disease.

DR. A. C. GETCHELL, of Worcester: We have heard of what is done in Boston. It may be interesting to discuss what is done in smaller communities. It may be said, in a general way, the smaller the town the less efficient is the board of health. Let me speak of the situation in Worcester. The board of health, while requiring registration of tuberculosis patients according to the law, makes no special effort to enforce it. But in that place sputum examinations are made free by the board of health and a positive examination constitutes registration. One other point. Many death returns of tuberculosis patients are not returned as such, sometimes because an accurate diagnosis has not been made and sometimes a different cause is assigned, such as bronchitis, in order to meet insurance requirements. In such cases the board of health evidently would make no disinfection of the premises, even if it were the practice in other cases. Just here the tuberculosis nurse is of great value. In Worcester, where there is such a nurse, she is in regular attendance at the two special tuberculosis clinics and visits the homes of all the applicants at these clinics. She also visits all the patients of private physicians whom she is asked to visit. She keeps in close touch with these patients, and if they remove to another place or die she sees to it that the board of health is notified and the premises are disinfected, which the board of health is ready and willing to do.

In many smaller communities where there is not a tuberculosis nurse there is a visiting nurse, employed by charitable associations. Through the instrumentality of these nurses I think disinfection of premises after death may be made much more general than it is at present.

DR. F. T. HYDE, of Weston: I happen to belong to the rural district, Weston, and I merely want to speak of some of the work we have been doing. Since 1903 all cases have been required to be reported, and I think there has been no case since 1903 that has not been reported to the board of health, and we have not found any objection to the reporting of cases; also all houses are thoroughly disinfected after death or after the removal of the patient, and not alone the room, but the entire house. Again, we recognize the need of disinfecting library books that had been brought from the library and used by the tuberculous patient. We have made a point of finding all the books and seeing that they were thoroughly disinfected before going back to the library, and also the school books, and in one or two cases where the children were known to be tuberculous, they have been denied the privilege of a public school, tuberculosis being one of the diseases now classed as "dangerous to the public health."

STATE SANITARY SUPERVISION.*

BY HERBERT C. EMERSON, M.D., SPRINGFIELD, MASS.

AT the first meeting of the State Board of Health, held at the State House in Boston, Sept. 15, 1869, the senior member, Dr. Henry I. Bowditch, gave an address remarkable for its clear insight and deep convictions concerning state obligations toward the public health. In discussing the duties that might be assumed, and matters that should be investigated by the state in relation to the preservation of the public health, he says, "The authorities of a state are bound to take care of the public health . . . in order that each citizen may not only have as long a life as nature would give him, but likewise as healthy a life as possible." The duty of the state thus expressed by Dr. Bowditch has been generously assumed by successive legislatures which have enacted laws relative to public hygiene, and this feeling of responsibility is still further expressed in the comprehensive powers and duties assigned to the State Board of Health.

With the establishment of the State Board of Health in 1869, the work of sanitary supervision actually began. Members of the board were deeply impressed with the responsibilities of their new work, and the same spirit of earnestness has characterized all succeeding boards in carrying out the intent of the statutes.

Personal and local interests have been considered with reference to the larger questions of public policy and welfare. New fields of activity have constantly been undertaken, and the investigations of the state have included a wide range of subjects which have a bearing, direct or indirect, upon the public health. Although the state has always kept close watch of the health of towns and cities on the incidence of disease, the occurrence of epidemics, questions of public water supplies and proper sewage disposal, and the oversight of food and drug products in accordance with the state laws, there has recently been established a new department of state sanitary supervision which directly affects the health of by far the larger portion of the population of the whole state. Previous to the establishment of the work about to be described, comparatively little attention had been paid to industrial hygiene and the effect of the various industries upon the health of the employees.

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*Read before The Massachusetts Medical Society, June 9, 1908

In 1871 the legislature requested the State Board of Health to inquire into the employment of minors engaged in all cotton, woolen, silk, flax and jute manufactures within the state and the effect of such employment on the health of minors as well as their mortality. This investigation was carried out by means of a circular of questions sent to six hundred and thirty-six manufacturers. The result of this inquiry furnished data of considerable interest and showed that the subject was one to which too little attention had been paid.

In 1882 a valuable article was published in the annual report of the State Board of Health on "Our Eyes and Our Industries." In 1904 the State Board of Health was ordered by the legislature to investigate the sanitary condition of factories and workshops and other places of employment with respect to all conditions affecting the health of persons employed therein, and one year later this investigation was ordered to be continued. These investigations were made by personal visitation, and the results constitute a most valuable reference work on the existing conditions of industrial hygiene in this state.

In 1907 the legislature passed a bill entitled "An Act to Provide for the Establishment of Health Districts and the Appointment of Inspectors of Health." These inspectors were to be physicians acting under control of the State Board of Health, and in addition to their duties as prescribed by law, they are to perform such other duties as the State Board of Health may direct.

The duties of these inspectors are of a most varied character, and I shall confine myself to a brief consideration of some of their work with special reference to city conditions. Each inspector must be informed as to the general sanitary condition of his distric, which means that he must keep in touch with the local boards of health, the morbidity and mortality returns and the occurrence of epidemics.

All this sort of work can be more easily handled in the larger cities, where the local board of health is active, than in the smaller towns, to which the inspector must necessarily devote more time. More important in cities, however, is the work of the inspectors along two lines, namely, the oversight of the sanitary conditions of all factories and workshops, schoolhouses and all public buildings, and the supervision of the health of all minors working in factories.

It is the duty of the inspectors to see to it that the employees of factories and workshops are provided with the proper amount of light and air, and that the places of work are kept clean and well ventilated. State laws clearly provide for order, decency and cleanliness in every department of manufacturing, and the time has come when the management of a factory must maintain a certain standard of cleanliness and ventilation for the benefit of its dependents as well as keeping up the dividends for the stockholders.

Most manufacturers are now very much alive to the physical welfare and good health of their employees, not only because the state laws require them to exercise common humanity toward them, but because they find it to their own advantage to keep their dependents in good physical condition.

Occasionally a manufacturer objects to so much inspection, which reveals violations of the statutes enacted for the sake of protecting the health of the employees. One such manufacturer recently said that he thought he would be compelled to remove to another state where the laws did not demand such careful oversight of the sanitary conditions of his factory. In this case the actual expense to him to conform to the statutes was but slight, but the idea of being obliged to keep the waterclosets in a clean condition, to provide sputum receptacles and the medical and surgical chest required by law, disturbed him exceedingly.

No general standard is laid down in the law as to just what constitutes proper removal of dust and dirt, proper ventilation and cleanliness in a particular factory. The conditions that are found in the best-regulated establishments in the same line of work must serve as the standard for other industries of the same kind. Old buildings, with their small windows and low ceilings, present different conditions from the new, high-posted structures, with sides almost entirely of glass. But the age of the building is no excuse for leaving dirt and cobwebs in the corners, and letting the windows remain so thick with dust that they appear like a new kind of opaque glass. In many factories the custom prevails of washing the windows but once a year, but one usually finds the windows in the superintendent's office are cleaned very much oftener.

In connection with the maintenance of general cleanliness of factories and workshops, the law provides for the establishment of proper toilet facilities for both sexes. Happily most employers realize the importance of these matters to-day, and while reasonable compliance with this law is generally found, the extremes of good and bad conditions are also met with. Inspection of a large number of factories shows that whatever the nature of the business or the character of the employees, these closets can be kept in a clean, decent condition if they receive the attention they deserve.

The proper removal of irritating dust is one of the special objects sought by this inspection, as it constitutes one link in the chain for the suppression of tuberculosis, which I take to be one of the chief objects of the inspection. One of the main sources of harmful dust is from dry grinding on emery wheels. The installation of proper hoods, suction pipes, fans, etc., required by law, is frequently strenuously objected to by the employers. The item of expense is the real cause of objection to these appliances on the part of the managers, while the objection on the part of the employees usually comes from poorly-applied, unwieldy and awkward devices which have been previously used. In these days of piece work, speed is the main object of every workman, and anything that interferes with quick manipulation is objected to and generally thrown aside.

In many woodworking shops and rag-sorting rooms the fine dust is almost all removed, so that rooms are comparatively free from it. In some mills, however, there are no devices for removing dust from the sand-papering machines, and the air is full of fine flying sawdust. In the paper mills using new and clean rags the problem of dust removal is far easier than in mills using old and dirty rags. The problem of removal of dust and dirt and the furnishing of proper light and ventilation becomes acute in the large factories devoted to the textile industry. This industry employs a larger number of persons than any other in the state. The weave rooms of these mills, under ordinary conditions, are frequently overheated, often contain an excess of moisture, are lighted by artificial light much of the time and insufficiently ventilated. To improve these conditions, which must necessarily affect the health of persons employed therein, is the problem which state supervision may assist in solving.

The oversight of the ventilation and sanitary condition of all schoolhouses and public buildings are included in the duties of the inspectors of health, and frequent inspections will be necessary to determine their condition at various times and seasons.

One of the most common causes of complaint in schoolhouses is the fact that the ventilating systems are so frequently out of order. There is often some trouble with the fans, or with the motor, or in the flues, or with the heating system, so that high temperatures, cold drafts and foul air are frequently met with. Another cause of poor ventilation is the custom of overcrowding schoolrooms far beyond the capacity for which they were originally intended. This is particularly noticeable in the lower grades. It appears to be the idea that large numbers of small children need only the same amount of air which would be furnished to a much smaller number of larger children. This is a wrong inference and should be corrected. The whole question of ventilation is, of course, a complicated one, but so far as the health inspectors are concerned, the danger to health of poor ventilation is to be first considered.

Another important duty connected with the inspection of public buildings has reference to the maintenance of a sufficient number of proper toilet facilities which shall be properly kept. It is to be hoped that nuisances that exist in connection with the waterclosets of railroad stations, theaters and summer resorts may soon be controlled and corrected.

The attention of the state inspectors is continually directed toward the means that may be used to eliminate the spread of tuberculosis. Not only does the state law prohibit spitting upon the floor of any mill or factory, but now the proprietors of workshops and factories are required to furnish sputum receptacles. Although this involves some little expenditure on the part of the larger corporations, I have generally found that the officers of these corporations realize the necessity of prohibiting promiscuous expectoration and I find that they are usually willing to provide the proper receptacles. It not infrequently happens that the foreman or superintendent with whom this subject is being discussed keeps up a more or less frequent, although unconscious, spitting upon the floor.

Perhaps the most far-reaching results of the state inspectors' work may be expected from their duties relative to the employment of all persons working in factories who are under twenty-one years of age. The inspectors must be personally acquainted with the health of all minors, with the kind of work done by them and with the conditions under which they are employed. Not only their physical condition must be inquired into, but sufficient acquaintance with their home surroundings and family history must be obtained so that tendencies toward any special disease may be watched for from time to time during the visits of the inspector. A physical examination must be made of all minors whose appearance or history suggests the presence of disease, and particularly with reference to a family history of consumption is the physical condition of a minor to be carefully ascertained. In this way incipient cases of tuberculosis may be discovered, with the result that not only may a focus of infection be removed, but the patient may be started on the road to recovery. A minor's unfitness for work or for the particular kind of work he is doing is to be called to the attention of the parents, employers and the State Board of Health.

The number of children who are placed at work as soon as the legal age limit of fourteen years is reached is very considerable, and these children will be closely watched. It is especially important that growing children who must work for their living be accorded as close oversight as possible as to conditions under which they labor, as occupations involving the inhalation of irritating dust and noxious vapors and the use of much artificial light must interfere with the child's development, break down resistance and become the starting point of illness and disease. Particularly is this true of young girls, and if parents and employers do not see the tendencies to ill health and disease in their children, their attention should be brought to these facts.

I have recently seen a girl of seventeen who impressed me as tubercular, although no definite signs were found upon physical examination. She was working in an inside room, poorly heated and ventilated and lighted. Improvements in her surroundings were suggested, which were agreed to by her employers. Before the next visit was made to this factory I ascertained that the girl had left her work and a diagnosis of tuberculosis had been made by her physician. I recently examined a boy of sixteen who weighed scarcely sixty pounds. He was doing very light work, and though undersized and poorly developed, no actual disease was found at this time. The importance of the inspection of minors becomes more and more apparent as new factories are visited.

In some cities an oversight of clothing made and repaired in tenement houses furnishes a considerable amount of work for the inspectors. This results in not only safeguarding the consumer, but frequently brings to light cases of disease, especially tuberculosis, which otherwise might exist for months without detection.

The time does not seem far distant when the results of state sanitary supervision as developed in Massachusetts shall be productive of a greater degree of healthfulness throughout the state, and a partial accomplishment at least of the dictum of Dr. Bowditch that the state is bound to take care of the public health so that each citizen may live as long and as healthy a life as possible.

DISCUSSION.

Dr. A. S. MacKnight, of Fall River: The subject of sanitary inspection, especially the matter of state inspection, including the matter of medical inspection of health, was ably presented and discussed about a year ago by our very able secretary of the State Board of Health, Dr. Harrington, and about the same time Dr. Frank G. Wheatley, senator, read a paper on factory inspection. Our own Dr. Burrell, in his address before the American Medical Association, touched upon some of the qualities which ought to possess the physician, and outlined some of the ways in which physicians, alive to their opportunities in the various communities, might rise to the occasion. I might also say that Dr. William Sidney Thayer touched upon the same thing before the American Medical Association, and pointed out some of the ways in which physicians might be more than mere physicians, mere practitioners; whereby they might rise to the opportunities afforded in their respective communities of being "*sanitarians*," of taking steps for developing certain lines of work which will be for the benefit of those round about, not exactly in the sense of charity, but something akin, along the line of advanced sanitation and a better condition of the publich health.

The paper presented to-day by Dr. Emerson deals in a very broad and general way with the question as applied to a "state," and especially as applied to cities; while the paper of Dr. Jones dea s more with the "district" community, and has a somewhat rural feature. I might say that a great many things which have been mentioned in both papers are not only actual, but are everyday, experiences in the lives of most of the practitioners, particularly those engaged in board of health work, or who are engaged along sanitary lines. Some of the things which have been mentioned in the paper of Dr. Jones are among the difficulties which we have to meet with day by day.

In the matter of state inspection as applied to the examination of minors (which is a very difficult matter indeed), in the first place it is with great difficulty that one can get the overseers, or the superintendents, to allow the minors time sufficient for an examination. Sometimes it is impossible to examine them in the weave rooms or other departments of a great mill, and it is necessary to have them taken out into the tower, or other quiet place; and even then, if four or five or more come in line (as is very apt to be the case), you meet one who can speak no English whatever; it is very unusual to find an interpreter, and that blocks the line. Consequently, you have five or ten or fifteen waiting round about, with the overseers pushing and nudging this one and that to return to his machine and his work; therefore, the examination is very unsatisfactory so far as the examination of that minor is concerned. This occurs in some departments; it is not true of all.

Again, along the line of sanitary inspection, so far as waterclosets are concerned; sometimes it is a fact that the waterclosets are inadequate in regard to size, entirely too small, and oftentimes close together, so that only a thin partition separates the sexes; that is particularly to be deplored, more especially when we consider the number of minors and the possibilities and dangers to which they may be subjected. Now, while tuberculosis takes up, of course, a great deal of our thought at the present time, and while the inspection and examination of minors is supposed to have a special bearing on the tuberculosis question, this condition as to waterclosets leads, in my belief, to possibilities in other directions, for the prospects of venereal disease are just as much to be considered as tuberculosis, and perhaps more, in factories, etc.

In some mills we find that superintendents are anxious to bring about a different condition of affairs. I have reference now to one mill in which the superintendent has installed 44 waterclosets, at an expense of $150 each, on the ground that if he provides waterclosets considered standard, they can be kept clean and will require very little repairing and, possibly, he may bring about a better condition regarding his help and, in a general way, regarding cleanliness. In another mill the superintendent has taken the upper half of the sash of his mill windows and changed it, so that it hangs on a swivel and the window swings as a transom might, so that there is better, purer air, better ventilation generally, by 144 windows so changed in that mill.

We find that mill men are specially apt to meet state inspection with remarks something like this: "The state is encroaching upon our work, requiring us to do things we had no idea we should ever be called on to contend with." "Our business is to make cloth and to make dividends, to declare dividends." Nevertheless, deep down in the hearts of these mill men is a broad humanitarian spirit, and if our state inspectors will take the time and trouble to talk with them, they can show them that while they may have the ability to make cloth and to declare dividends, they are not *sanitarians* nor *physicians*, and that they know very little about these subjects. And I might say in this respect that it is the part of the state inspectors of health not only to inspect and examine, but to educate, not the *treasurer* or the *superintendent*, but the overseers and subordinate help.

Now, to mention another thing. Sometimes we meet an overseer who is in a poor condition of health, who has not been endowed by nature with anything that is robust, or anything that gives promise of long life; who may have a very frail, a very fragile, organism; he is scared almost to death if he finds in his department a case of profuse expectoration, or has reason to believe there is in that very room a tuberculosis case, well advanced. That man, himself, will seek to limit expectoration and will try, as soon as possible, to find some way by which he can improve the condition of that operative or find some one else to take his place.

So that, in different ways, along different lines, it is possible for us to bring about these changes, which in the end mean a better condition of health publicly, not only in the commonwealth generally, but in the mill, and not only there, but with benefit to minors. A great many minors are certainly employed under the age of *fourteen years*, required by the school and state law; they do not think anything about a lie; they are taught to lie; their parental influences are such that they are working at a tender age. I know of a factory where at 4.30 in the afternoon little tots come from school and clamber up three or four flights of stairs to the spinning-room and spend the rest of the day, to 6 o'clock; and I know mill men who permit that condition of affairs. These children have nowhere else to go; there is no place made for them, the door is locked at home and they muster in the street and find their refuge in the mill, from 4.30 to 6 o'clock. These are some of the things which confront us in our inspection work. They are only a few, but they are very important.

Clinical Department.

CHLOROSIS WITH THROMBOSIS OF THE SUBCLAVIAN VEIN: REPORT OF A CASE.

BY EDMUND A. ROGERS, M.D., BOSTON,
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(From the Medical Clinic of the Carney Hospital, Dr. Henry A. Christian, Physician-in-Chief.)

Uncomplicated cases of chlorosis are familiar to everybody, and at the present time are of no especial interest. However, cases of chlorosis with venous thrombosis are of interest owing to their comparative infrequency, and thrombosis of certain veins in this condition is quite rare. The most common site of thrombosis in chlorosis is the veins of the leg, while the veins of the forearm and arm are less often involved. Of 51 cases of thrombosis in chlorosis which Schweitzer [1] was able to collect from the literature in 1898, only four occurred in the vessels of the upper extremity, while 33 were found in the lower extremity and 12 in cerebral sinuses.

Thrombosis of the lower extremities occurs usually in the femoral and iliac veins and almost always there is some extension into the inferior vena cava. Cases of this kind have been reported by Batle,[2] Lowenberg [3] and Huels.[4] Batle [5] tells of a young chlorotic girl who was afflicted with a phlebitis of both femoral veins and of the inferior vena cava with consequent enormous enlargement of the veins of the abdomen. Simultaneously there occurred pains in the head, vomiting and coma. Autopsy showed thrombosis of the inferior vena cava, common iliac veins and superior longitudinal sinus.

Kockel [6] observed for several months an intensely chlorotic girl fourteen years old, who, on account of a serofibrinous pleurisy, was confined to her bed for five weeks. When at the expiration of that time she left her bed, she was suddenly taken with extreme dyspnea and died quickly. Autopsy showed a serofibrinous pleurisy, an embolus in the stem of the pulmonary artery and a thrombus in the inferior vena cava about 5 cm. below the diaphragm.

Weinberger [7] has reported a case of chlorosis with thrombosis of the inferior vena cava in a girl twenty-one years old. Especially noticeable were marked cyanosis and extreme swelling of the whole lower half of the body to the navel. The abdominal parietes showed symmetrically enlarged veins, dilated to the thickness of a quill. Veins connected with the collateral blood vessels of the lower extremities and the abdominal integument, winding themselves around the ilium in the inguinal region and passing over into the lumbar veins, carried the blood from the lower half of the body to the upper vena cava. There were also dilated veins at the upper portion of the abdomen and thorax establishing communication with the superior vena cava. There was extreme anemia, blood examination showing hemoglobin 12%, red blood corpuscles 1,600,000, white blood corpuscles 12,800. Yet in spite of the severity of this case a complete cure resulted and a final blood examination three months later showed hemoglobin 90%, red blood corpuscles 4,500,000.

The following case of thrombosis of the subclavian vein in a patient with chlorosis was observed by me at the Carney Hospital, and on account of the infrequency with which the condition occurs is here reported with permission of Dr. Henry A. Christian, to whose service at the Carney Hospital the case was admitted.

M. B., single, age eighteen years, a factory girl, was admitted to the medical service of the Carney Hospital, Nov. 13, 1907. Her father died of cancer at the age of fifty-six; otherwise her family history was good. Several years ago she had both scarlet fever and typhoid fever, but made a good recovery from each. Menstruation began at thirteen and has always been regular and normal. Patient has always been constipated and for two years has suffered much with headache, and a sense of fatigue had been present most of the time. For a number of years she had drunk ten cups of tea and four cups of coffee daily.

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[1] Thrombose bei Chlorose. Virch. Arch. für path. Anat., etc., 1898, clii, 337.

[2] St. Thomas's Hospital Reports, xvii, 49.

[3] Cited by Weinberger.

[4] Cited by Weinberger.

[5] *Loc. cit.*

[6] Ueber Thrombose der Hirnsinus bei Chlorose. Deut. Arch. klin. Med., 1894, lii, 557.

[7] Ueber ein Thrombose der Vena Cava Inferior bei schwerer Chlorose. Wien. klin. Wochenschr., 1904, xvii, 64.

On Nov. 8, 1907, patient noticed that her arm from the shoulder to the finger tips was swollen, a condition which increased daily. She experienced no pain and there was no shortness of breath. On admission to the hospital patient was put to bed immediately. The forearm was supported in a sling and elevated on a pillow. She was not disturbed for the usual bath and a complete physical examination was not made at this time for fear that the thrombus might become dislodged. The left arm from the finger tips to the shoulder was markedly swollen and there was an extensive veining apparent over the left pectoral region and shoulder. Temperature was 99.6. Pulse was regular and of good volume and tension in both wrists. Over the precordium there was a loud, blowing systolic souffle with an accentuated pulmonic second sound. The measurements of the left arm were $10\frac{1}{4}$ inches at the forearm, $11\frac{3}{4}$ inches in the mid-arm and 12 inches below the shoulder, the corresponding arm measurements on the right side being $9\frac{1}{2}$, $10\frac{1}{2}$ and $10\frac{3}{4}$ inches respectively. Hemoglobin on the day of admission was 60%.

The patient was given 2 five-grain Blaud's pills three times a day, 15 drops of fluid extract of cascara morning and night and a semi-solid diet. On Nov. 16 blood examination showed hemoglobin 60%, red blood corpuscles 4,160,000, and a stained blood smear showed marked achromia and poikilocytosis.

On Nov. 17, the swelling of the arm was distinctly less and that pulse easily felt at the wrist. On Nov. 21, the arm had returned to its normal size. Nov. 23, the blood examination showed hemoglobin 70%, red blood corpuscles 4,200,000; achromia and poikilocytosis were less marked.

Dec. 7, a more complete physical examination was made. There was still marked pallor of the skin and mucous membranes, though the patient was well developed and her nutrition was good. The skin over the left arm was harsher and drier than elsewhere. Both radial arteries were of equal strength, but the fingers on the left hand appeared redder than those of the right. Over the left upper pectoral region a delicate veining was still present. No pulsation or tumor was noted in the left axilla or in the left supraclavicular and infraclavicular fossæ. The pupils were normal and the mouth and throat were normal. Chest was well formed and symmetrical. Lungs were resonant. There were no râles. Base of the heart was at the third rib and the right border at the right sternal margin. Apex beat was visible and palpable in the fifth space, $\frac{3}{4}$ inch from the mid-line, and the left border corresponded. All over the precordium, but most intensely over the apex, a loud blowing souffle was heard coincident with the first sound and a distinct systolic thrill was palpable at the apex. Cardiac action was regular and the sounds were of good quality. Liver and spleen were not enlarged. The abdomen was soft and uniformly distended. All of the reflexes were normal and there was no edema of the extremities. On Dec. 7, the date of discharge, the hemoglobin was 75%, the red blood corpuscles 4,300,000 and there was almost no poikilocytosis or achromia.

Four months later the patient returned to the hospital for examination. She had carefully followed directions as to diet, etc. At that time her hemoglobin was 95%, red blood corpuscles 4,375,000. There was no poikilocytosis and no achromia apparent in stained preparations. There was no change in the cardiac condition. All signs of any peripheral venous obstruction had disappeared from the affected arm. During this four months she had enjoyed excellent health and had been particularly free from that fatigue which she had formerly experienced.

The chief points of interest in this case are the occurrence of thrombosis of the subclavian vein (an unusual site) in a mild case of chlorosis, and the development of the condition without any discomfort on the part of the patient and without any febrile disturbance.

Medical Progress.

REPORT ON OBSTETRICS.

BY

ROBERT L. DE NORMANDIE, M.D., BOSTON.

SURGICAL TREATMENT OF PUERPERAL FEVER.

Sinclair,[1] in a very able and interesting article, reviews the history of puerperal fever from the time Semmelweis advanced the cause until the present time. He first takes up the various treatments instituted, making many caustic comments, and then gives what he considers the proper method of treatment. There is, he says, only one etiology of puerperal fever, the poisoning of a wound, and there is essentially only one method of treatment, to make the wound clean.

Sinclair uses a large, sharp curette, roundly condemning the blunt curette and also the finger. He carefully describes the technic used. He uses anesthesia only in exceptional cases, but gives morphia, according to the size of the patient, three quarters of an hour before the curettage is planned, and one half an hour to twenty minutes before she is given three to four ounces of whiskey.

After taking complete aseptic precautions he curettes the cavity of the uterus. He then flushes the uterus out with a sublimate solution (1:2000) and swabs out the cavity with pledgets of cotton wool soaked in the same solution until there is no adhering tissue. Finally he lightly packs the uterus with gauze wrung out in the corrosive solution, removing this in twenty-four hours, and gives a full dose of ergot.

Sinclair does not believe in Metschnikoff's "granulation wall" of phagocytes or that there is danger of dislodging thrombi by curettage, and he is convinced that the danger of puncturing the uterus is a mere bogey. In regard to the major operations in the treatment of puerperal fever, hysterectomy he feels has only a very limited application, as the condition, in order to warrant considering it, has usually advanced too far. Ligation and excision of the thrombosed veins, he thinks, will be but seldom required. In puerperal peritonitis he favors a small abdominal opening and flushing the abdominal cavity with large amounts of hot saline solution and then opening the posterior vaginal cul-de-sac by a small incision, inserting a glass drain and washing out the pelvis. The vagina he packs with gauze soaked in sublimate solution.

In connection with Sinclair's article and the advice he gives in the treatment of puerperal general peritonitis, it is interesting to read the method of procedure that McDonald, of New York, recommends.

McDonald[2] says immediate laparotomy and evacuation of all purulent matter and removal of the focus of infection is recognized as the proper procedure by all surgeons in cases where the peritoneal infection has resulted from previous foci, such as pus tubes. There is, he says, more difference of opinion as regards the value of operation in lymphatic peritonitis. It is this form of peritonitis that is usually referred to in connection with the puerperium. McDonald decidedly questions whether resection or ligature of the veins of the broad ligament has any value, and he feels that laceration of the broad ligament, with division of the lymphatic vessels allowing microorganisms to escape, is unjustifiable. Hysterectomy, he says, has more justification, especially if the lesion is a local one in the uterus.

As the streptococcus is the usual infecting organism, this has led to the use of anti-streptococcic sera, but with poor results. McDonald says that recent reports show that properly prepared polyvalent serum has given more favorable results. He feels that the injection of nucleic acid is a useful adjunct, especially when the infection is caused by the streptococcus. McDonald does not wash out the abdominal cavity in these cases on account of the danger of spreading the infection. He favors a small incision and the use of drainage tubes. Vaginal drainage he regards as often useful.

The position Sinclair takes in regard to the lack of danger in curetting a septic uterus is, I think, too radical. We have all seen surgeons who are known to be careful, painstaking men, puncture the uterus. That it is a possibility, especially where the septic condition has been of a few days' duration, must be kept in mind. A position at the opposite extreme from Sinclair is one held by Ruth.[3] He believes the curette should never be used, certainly not a small one or a sharp one. Curettage he feels can do no good and may do much harm in disseminating the infection and in uterine perforation.

MATERNAL MORTALITY AT THE JOHNS HOPKINS HOSPITAL.

Goldsborough[4] analyses the maternal mortality of the first 5,000 cases at the Johns Hopkins Hospital. The cases are from the out-patient clinic and the hospital, the out-patients being a little in the majority. There were in all 55 deaths, giving a mortality of 1.1%. Goldsborough divides the deaths into the following classes: (1) Infections, 21. (2) Toxemias, 16. (3) Hemorrhage, 8. (4) All other causes, 10. In the first class 12 cases were proved infected before delivery, leaving 6 cases where the responsibility of the infection lay on the hospital, a mortality of $\frac{1}{8}$ of 1%. In classes 2 and 3 several of the cases were moribund when first seen.

From these deaths it is seen that even in a well-regulated obstetric hospital a certain low percentage of deaths will occur from sepsis. The lower the rate the more certain it is that an aseptic technic is carried out. The deaths in classes 2 and 3 would doubtless have been less had the cases been under competent care during the entire pregnancy. High percentages in toxemias and hemorrhage will continue to hold until the general practitioner appreciates the value of constant supervision of the patient, and until he impresses upon his patients that the slightest show of blood is abnormal and may mean a most serious condition. The same holds true in the toxemias; the slightest deviation from the patient's general health must be noted at once and energetic means taken to correct the condition. It is not enough simply to tell a patient to carry out this and that order; it devolves upon the physician to see that all is done, as is best in his judgment.

In class 4, the intercurrent diseases and accidents, Goldsborough has grouped a class of cases which gives a mortality whether the case is an obstetric one or not. It is interesting to see that no deaths have occurred from the use of chloroform and amusing to read that in the one case where ether was used the patient died and to its use is ascribed the death!

DEATH OF THE MATURE FETUS IN LABOR.

Stowe[5] analyses 190 cases of deaths of the mature fetus in labor, with autopsies on 33 of them. He concludes that prolonged labor and a dry labor is very serious to the child, while pelvic deformity he regards as one of the principal causes of death. Precipitate labor, cord around the neck and prolapse of the cord all give varying percentages of death, as does premature detachment of the placenta and abnormal situations of the placenta.

Stowe urges that the pregnant woman place herself early under competent medical care in order that a careful ante-partum examination be possible, and during labor he demands frequent auscultation of the fetal heart sounds.

A NEW METHOD OF VERSION IN TRANSVERSE PRESENTATIONS.

King[6] proposes to use the pressure the thigh makes on the pregnant abdomen when the patient is in a squatting posture as a factor in changing the position of the fetus in the uterus. King's paper has seven illustrations which make his points very clear. He formulates the following rule: "Let the woman kneel only on that side to which the child's head is directed." King has as yet no real clinical experience with the method. He feels, however, that the fetus may be turned by this method even when the uterus is dry, rigid, and a well-developed Bandl's ring is present. This method might be tried in the early stages of labor with the membranes intact, but to persist in it with the condition as above noted seems to the writer inadvisable.

LACERATION OF THE PERINEUM.

McDonald[7] reports a series of 48 cases where perineal lacerations occurred, with illustrations of them. After a short review of the history of the repair of lacerations he goes on to the causes which are (1) Too rapid expulsion of the child. (2) Relative disproportion between the presenting part and the parturient canal. (3) Faulty mechanism of labor. (4) The use of forceps. McDonald thinks that unless there is considerable increase in the size of the head above the average lacerations do not depend to any extent upon this condition and places the rapidity of the delivery as the most frequent cause of lacerations. In forceps deliveries he feels the harm done depends upon the kind of forceps used and whether the forceps are on or off when the head is delivered. He does not believe that the shoulders in themselves cause perineal laceration. His article ends with an excellent description, with illustrations of the technic he uses in the repair of lacerations.

The writer cannot agree with McDonald that it is the kind of forceps used that causes lacerations. Lack of skill and failure to dilate the perineum carefully and completely before the forceps are applied are much more important than the kind of forceps used. Neither does the writer feel that shoulders in themselves do not cause lacerations. In by far the majority of cases the tear is started by the head, only to be enlarged by the shoulders, but I feel confident that in not a few cases the tear is started by the shoulders.

THE BACTERIOLOGY OF THE PUERPERAL UTERUS.

Nicholson[8] and Evans review the recent work that has been done on the bacteriology of the puerperal uterus, remarking on the marked differences in the results of the various investigators. The differences, these writers feel, depend upon the varying technic used in culturing the uterus. They have evolved a method by which they think they have reduced the possibility of contamination to a minimum. They use a slightly curved, hollow speculum, the distal end of which is closed by a hinged cap. This speculum holds the glass tube into which the lochia is sucked by a syringe. The complete technic is carefully explained in their article.

Their conclusions based on 67 cases are as follows:

1. The uterine lochia is sterile in normal cases throughout the puerperium.
2. Streptococci are never present within the uterus without causing symptoms.
3. In a few instances non-pathogenic germs may be found in cultures. Satisfactory explanation of this fact is not made.
4. Ascendence of the gonococcus is rare.
5. Infection of the endometrium in culturing the uterus is always possible within a few days of delivery.
6. A study of the bacterial content is of great importance as a subsidiary means of diagnosing septic infection.
7. A technic must be adopted which will prevent all contamination of the lochia.

HEMATURIA IN PREGNANCY.

Balloch[9] reports a case of hematuria in pregnancy in a woman thirty-one years of age. This patient first passed blood four years before she came under Balloch's care. She was then pregnant eight months and the bleeding lasted ten days. No bleeding occured in the next pregnancy, but it appeared again in the sixth pregnancy when she was about four months advanced. It continued without intermission during the remainder of this pregnancy and for seven months after the delivery, when she came under Balloch's observation. There was no history of renal colic, and by physical examination nothing pathological was found. Examination of the urine showed no casts or pus, only red blood corpuscles. Cystoscopy showed the bladder to be normal, ureters normally situated. From the left ureter bloody urine oozed. Fluid from the right kidney was normal.

Medical treatment had been tried without avail and Balloch decided upon a nephrectomy. This was done and the patient made a good recovery. Microscopic examination of this kidney showed a chronic glomerulo-nephritis to be present. The patient immediately became pregnant again and blood appeared again in the urine, disappearing when the child was born, and has not since appeared.

Within the past few years various writers have written of an "essential" or an "idiopathic" hematuria, where there has been no pathological process demonstrable. Seitz, writing in von Winckel's[10] "Obstetrics," classifies this condition as a (1) hemophilia, (2) an overworked kidney, or (3) an angioneurosis. In order to place a hematuria in this class he says that there must be no hereditary taint, no pathological condition in the patient; that it must occur during pregnancy and stop at the end of pregnancy. In other words, it must be due entirely to pregnancy. The hematuria varies in amount and in duration; it always, Seitz says, disappears after pregnancy but may occasionally return during lactation. He suggests that this condition may be due to chemical toxic substances derived from the fetus and placenta.

But little has been written in English on this condition. Williams,[12] in the last edition of his "Obstetrics," says, "The passage of bloody urine is rarely observed during pregnancy, and its occurrence should lead one to suspect more or less serious lesions of the urinary tract." He mentions cases that have been described in literature as idiopathic hematuria.

Chute,[11] of Boston, read in 1906, before the American Urological Association, a most interesting article on "The Hematuria of Chronic Nephritis." He finds that a number of cases where hematuria was present and were operated upon showed no gross lesions. These cases were regarded as instances of "essential hematuria," "renal hemophilia," "angio-neurotic bleeding."

This proved an unsatisfactory explanation to some investigators, and more recently cases were operated upon, microscopic sections made and these showed some form of chronic nephritis.

It is not necessary here to go into a complete analysis of the etiology of this form of hematuria. Chute's article takes up each of the suggested causes. It is sufficient here to remember that a hematuria may be the first and only sign of an early chronic nephritis. There is no doubt that this occurs in non-pregnant cases; Balloch's case goes to prove that it also occurs in pregnancy.

In order to make this diagnosis all other pathological processes must be eliminated. This can only be done by the most careful physical examination, with cystoscopy and ureteral catheterization.

The importance of making an accurate diagnosis lies in the treatment of the case. Balloch did a nephrectomy and blood reappeared in the next pregnancy. Seitz advises an expectant treatment first, care in the diet and rest in bed. During the bleeding hydrastis, adrenalin subcutaneously or by mouth may be tried, but they often fail completely.

It seems that the diagnosis of "essential hematuria" must be given up, though it is impossible to say absolutely that the condition does not occur. The basic cause of a hematuria in pregnancy without demonstrable pathological changes is, in all probability, some form of an early chronic nephritis.

It is perhaps too early to determine absolutely the proper treatment for this condition. Expectant treatment at first, without doubt, should be tried, but if that fails and the patient grows worse, then the questions of inducing labor and operating on the kidney will arise. There is little doubt but that a decapsulation should be performed before a nephrotomy or a nephrectomy.

PYELITIS IN PREGNANCY AND THE PUERPERIUM.

In the past few years a considerable number of cases here and there have been reported of pyelitis occurring in pregnancy and during the puerperium. It is not uncommon, and now that attention is being called to it, doubtless many more cases will be reported. The writer himself has seen two cases, one in pregnancy and the other in the puerperium, within the past six months. The latest and most complete article that has come to his notice is by Vineberg.[17]

He reviews the history of this complication and gives Reblaub the credit for bringing it clearly before the medical profession. Craigin,[13] of New York, and Reed,[14] of Chicago, have both written interesting articles on this complication. How frequently this occurs it is difficult to say as Vineberg feels it is not recognized by the profession at large. As for the cause, there seems to be necessary two conditions, — slowing of the blood stream and infection with some pathogenic bacteria. Reed does not agree with this but regards pyelitis as a distinct disease of gestation, due to degenerative changes in the renal parenchyma plus bacterial infection.

The slowing of the urinary stream is caused by compression of the ureter by the enlarging uterus. Many autopsies have shown the ureters to be dilated, the right one more than the left, and, therefore, the right kidney is usually infected. The causes for this predominance suggested are: 1. The greater prominence at the brim of the pelvis of the right over the left common iliac artery, the uterus, therefore, making more pressure on the right than on the left. 2. The rotation of the uterus on its long axis from left to right, the well-known torsion of the uterus. 3. The greater frequency of positions in the right oblique diameter.

The infecting bacterium is usually the colon bacillus, though cases are reported with streptococci, staphylococci and gonococci as the cause. The mode of infection is a matter of dispute, whether it is an ascending one from the bladder or a descending one from the kidney, arising through the blood current. The latter is the one that most writers in this country at present favor.

There still have been too few cases reported to determine whether the preponderance of this complication is with primiparæ or with multiparæ. Craigin suggests that theoretically, because of the greater tone of the abdominal and uterine walls in primiparæ, more cases should occur in them than in multiparæ. In his reported cases he found this to be the fact, which, however, was contrary to the experience of other writers.

Craigin, Reed, Vineberg, all carefully go into the symptoms. The onset may be insidious, with only a slight feeling of malaise and a gradual rise in temperature, or it may be sudden, with a chill, pain in abdomen and side, nausea, vomiting and headache, the signs of an acute infection. Temperature generally shows marked morning remissions, but the pulse, at the onset, is not correspondingly accelerated. Bladder symptoms are not always present, but if they appear they are the usual ones, namely, frequent and painful urination, occasionally tenesmus and tenderness over the bladder. The absence of leucocytosis is of no significance, its presence is only confirmatory evidence that an infection is present. In the early stages the kidney is usually not palpable, but deep, careful pressure will generally give distinct tenderness; muscular spasm is present sometimes very early. Tenderness where the ureter dips over the iliac vessels is occasionally found, and on vaginal examination the ureter may sometimes be felt, thickened and somewhat tender.

Craigin regards the urinary examination, chemically, microscopically and bacteriologically, as the most aid in the diagnosis. In the first few days there may be nothing in the urine to point to any trouble. Later, on careful examination, pus and a few blood corpuscles will be found; sometimes casts and a few renal elements. The urine is acid. It is usually found that when much pus appears in the urine the temperature drops, to rise again when there is backing up of pus in the kidney and a corresponding diminution of pus in the urine.

The diagnosis of this complication usually is not difficult, provided it is remembered that it does occur and that careful routine examination be made. Cystoscopy and ureteral catheterization will give much valuable aid, but often they are not available. Craigin apparently does not think them essential as he does not mention them. Vineberg simply remarks on them, but Reed speaks of their great aid.

That this complication is far from being recognized, as quickly as it should be, is shown by a case which is reported by Esselbruegge,[15] for which he should be thanked for his courage in publishing it. His patient showed a typical septic condition, of slow onset, in the latter half of pregnancy. Esselbruegge regarded the origin, without sufficient evidence to be sure, as from the uterus. The patient steadily became worse, permission to empty the uterus could not be obtained and the patient finally died. Autopsy found the uterus normal but the "right ureter from the kidney down to the brim of the pelvis was markedly dilated, normal throughout the remainder. Small abscesses in the kidney substance with the pelvis dilated." The rest of the autopsy was not remarkable. Here is a case where the diagnosis was completely cleared by autopsy in a community where at least the knowledge of such a complication occurring in pregnancy was not known. There had been no cystoscopic examination and the urinary findings were misinterpreted, for he did not satisfactorily account for the pus which was present in an acid urine.

The three writers from whom I have drawn so freely, and whose original papers should be read, regard the prognosis on the whole as good for the mother when under efficient treatment, and that presupposes a correct diagnosis. The complication runs generally from a week to three, but in not a few cases it is prolonged and even death may follow, as in the case above recorded. Exacerbations have been recorded in the same pregnancy, as have been recurrences in succeeding pregnancies. That it will certainly appear in succeeding pregnancies is not so, for several cases have been reported by Meek [16] and one by Vineberg where there was no trouble. It is certain, however, that a patient who has had this complication must not become pregnant again until the urine, for many months, by the microscope, has been clear of pus and bacteria. The prognosis for the child is apparently unfavorable, as premature labor comes on in about 50% of the cases.

The treatment of this condition divides itself into three parts, medical, surgical and the question of the need for obstetrical interference. The medical treatment can be summed up in diuresis, with urinary antiseptics, catharsis and a bland diet. Vineberg recommends an ice bag to the affected side and lying on the side not affected. Mild opiates may be indicated. Some one, whom I do not know, has suggested that a sudden changing of the urine from an acid to an alkaline reaction will destroy many, if not all, of the bacteria present.

If the disease grows steadily worse the induction of premature labor and the empyting of the uterus must be done without hesitation. Williams,[12] in the first edition of his book, says if pyelonephritis arises in pregnancy then induction of labor is indicated, but in the second edition he favors the trial of medical means first and if no improvement follows then he empties the uterus. Whether we are to expect improvement under medical treatment does not appear from Williams's book. The other writers generally agree that much may be expected but that one must always stand ready to interfere if satisfactory progress is not made. One might justifiably persist longer, however, in conservative treatment in the interests of the child if it were near viability.

Resort to surgical operations on the kidney should be left to the last. Nephrotomy and nephrectomy should play but a small part in the treatment of this condition. Markoe,[18] feeling that the snugly fitting fetal head might be the cause of the mechanical obstruction to the urine, suggests that if the softer mass of the fetal breech be substituted for the hard mass of the fetal head the obstruction might be overcome and relief obtained. He, therefore, performs an external bipolar version. This method of treatment does not appeal to the writer, as the complication is not solely due to the pressure of the head on the ureter.

Pyelitis in the puerperium has the same characteristics as in pregnancy. The treatment is the same, but the prognosis, if improvement does not rapidly take place after efficient treatment, is that of an infected kidney, and here early surgical interference is necessary.

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According to the *Journal of the American Medical Association*, Drs. William A. White, Washington, D. C., and Smith Ely Jelliffe, New York City, have been appointed delegates to represent the United States at the Third International Conference for the Care of the Insane, to be held in Vienna, Oct. 7 to 11.

Reports of Societies.

AMERICAN SURGICAL ASSOCIATION.

MEETING AT RICHMOND, VA., MAY 4–6, 1908.

THE President, WILLIAM H. CARMALT, M.D., in the chair.

ADDRESS OF THE PRESIDENT.

DR. CARMALT referred to the advance in medical science, particularly in pathological anatomy, during the last half century, brought about especially by the greater facilities of surgical technic. The discoveries of anesthesia and asepsis paved the way to early operations and thereby at once opened a new field, giving the opportunity to early observations of pathological processes. Instead of operations as last resort to obviate impending death, they are now largely undertaken for distinctly therapeutic purposes. The local character of the initial stage of tuberculosis was cited and its transference from internal medicine to surgery remarked upon. Tuberculous peritonitis was cited as a striking instance. The knowledge gained of the internal secretions, as shown in operations on the thyroid gland, was obtained almost exclusively by surgeons. The very recent investigations on the parathyroids are instances of physiological and pathological advancement obtained altogether by surgical activity. The relations of pancreatitis to gall-bladder diseases, and the pathology of chronic diverticulitis of the sigmoid, are further instances of the debts of the pathological anatomist to the surgeon. The establishment of fully-equipped pathological laboratories in hospitals was strongly urged and the advantages to the hospital of clinical teaching in its wards insisted upon.

REMINISCENCES OF THE EARLY DAYS OF THE AMERICAN SURGICAL ASSOCIATION, BY ONE OF ITS FOUNDERS.

J. EWING MEARS, M.D., of Philadelphia, spoke of the beginning of the Association and placed on record some of the notable occurrences of its existence. Reference was made to its influence on surgical science in this country and of its development in the future. An account was given of the early meetings of the Association and a tribute paid to its founder, Dr. Samuel D. Gross. With Drs. P. S. Conner, W. W. Keen and Solon Marks, Dr. Mears is the fourth of the survivors of the original fellows of the Association. An appreciation was given of Dr. J. Collins Warren. The author considers it an open question whether or not a fixed place of meeting would not contribute to a more serious execution of the scientific work of the Association, and it is suggested that the selection of a permanent place of meeting might result in the erection, in the city of Washington, of a building suitable for its purposes. This would also provide quarters for the future accumulation of surplus volumes of the transactions and the archives of the Association. A notable event which had its origin in the Association was the movement resulting in the foundation of the Congress of American Physicians and Surgeons, carried forward by Dr. Claudius H. Mastin. Another event of special interest was the erection of a bronze statue of the founder of the Association in the city of Washington.

SURGERY OF THE GASSERIAN GANGLION.

DR. STEPHEN H. WEEKS, of Portland, Me., states that the operation for the removal of the Gasserian ganglion as a primary operation for the relief of tic douloureux is not justifiable, but that the extracranial operations upon the branches of the fifth cranial nerve should be first made. These almost invariably give relief, which relief is not infrequently permanent. The greatest care should be used in the preparation of the patient, and strict asepsis must be observed through every step of the operation. The osteoplastic flap in the temporal region, called the Hartley-Krause operation, is the one Dr. Weeks employs. A pint of normal salt solution with an ounce of brandy should be injected into the rectum about half an hour before the operation commences. In all his operations on the brain he has used ether. In the operation the second and third divisions are put upon the stretch with the blunt hook and divided close to the foramen rotundum and foramen ovale respectively. He dissects them back to the ganglion and lifts the ganglion from its bed by making traction on the inferior maxillary nerve, having first divided the superior maxillary nerve and removed the parts of the ganglion corresponding to these various divisions, leaving untouched the first division, with its corresponding portion of the ganglion. If the first division of the nerve and its corresponding portion of the ganglion be retained there will be no danger to the eye, and the only protection needed to the eye will be a simple compress and bandage. Sometimes the dura mater is considerably torn and the cerebrospinal fluid escapes during the manipulation of the brain. Dr. Weeks has seen no bad results follow this. On the contrary, it has seemed to be an advantage as it allows the lifting of the temporo-sphenoidal lobe more freely from the middle fossa, giving a better view of the ganglion and its nerves. In his last case, when the dura was dissected from the ganglion, though quite a little brain matter escaped, no unpleasant symptoms followed. The mortality of the operation thus far in his hands has been nil.

DR. MAURICE H. RICHARDSON spoke of the interest and value of Dr. Mears' paper. He urged that in the discussion of the scientific papers the unfavorable as well as the favorable side should be given.

DR. A. VANDER VEER, of Albany, agreed with Dr. Mears that no other man could have done the work executed by Dr. Samuel D. Gross in the organization of the American Surgical Association.

Referring to Dr. Weeks' paper, he has done successfully several times the operation for the removal of the Gasserian ganglion for trifacial neuralgia. Hemorrhage has always been to him an important element in this operation.

DR. S. J. MIXTER, of Boston, does the operation for the removal of the Gasserian ganglion in two stages. While the method is not so brilliant as the one stage, he thinks it better for the patient.

DR. WEEKS, in closing, said he had operated four times and all the patients had recovered. In one case, in which at the time of operation a small portion of the brain escaped, nothing untoward followed. Later, since the writing of his paper, the patient reported that she had some difficulty in pronouncing certain names.

ACUTE, GENERAL PERFORATIVE PERITONITIS.

DR. JOHN B. MURPHY, of Chicago, in presenting a paper upon this subject, desired it to be understood that he referred to free, spreading, perforative peritonitis. He included in his paper only such cases of spreading, free peritonitis as resulted (*a*) from direct communications of the alimentary canal into the free peritoneal cavity, (*b*) from perforations of the appendix with primary retention of the infective material in a circumscribed zone and subsequent rupture into the free peritoneal cavity, so that there was a communication from the intestine, through the appendix and through the abscess in the free cavity. He did not include any cases of peritonitis with circumscribed abscess not communicating with the free peritoneal cavity, no matter how much pus was present in the general cavity. Were such cases included the number would run into the hundreds. The cases included in the series cover a period of a little over five years since instituting his present plan of treatment, and practically all of them have been managed in identically the same way. They have all been operated upon in public institutions, the records of which are open for inspection. There were 48 cases in all operated. Two were gastric perforations, 1 duodenal, 4 typhoid, 41 appendiceal. The sixteenth and forty-sixth cases died; the first from a double pneumonia on the sixth day after the operation; the second from a mechanic ileus and strangulation of the intestine around the omentum which was adherent to an old hernial opening. There were no deaths from peritonitis *per se*. When the plan of treatment was first followed out it was believed that the recoveries were coincident. Now, however, the number is so large and the results so uniform that it must be concluded that they are the sequence of the treatment. Dr. Murphy believes that the results of the future will be uniformly good. This estimate involves the assumption that the medical profession will make early diagnoses, insist upon early surgical intervention, limit its surgical procedures to the least possible handling and trauma consistent with closure of the opening and relief of pus tension, limit the anesthesia, shorten the operation, insure the continual absence of pus tension, eliminate the sepsis already in the blood, restore the blood pressure and inhibit septic absorption by position. The most important of these elements is the limitation of intestinal manipulation and exposure of the abdominal contents.

Dr. John B. Deaver emphasized the necessity of attacking the condition early and of doing as little as possible in the matter of manipulation. He has no hesitancy in reopening the abdomen for obstruction. In ten consecutive cases all recovered. Short anesthesia he regards as important. He uses eserin reinforced with strychnia. In some cases there has been slight cardiac disturbance from the eserin. He has no hesitation in sitting his patients up in bed. Concerning the giving of morphia, he " does not know what a hypodermic syringe looks like for the purpose of giving morphia." .

Dr. A. G. Gerster, of New York, within the last two years in his hospital service has abandoned methods of irrigation and mopping formerly employed and has followed the plan laid down by Dr. Murphy, with the Fowler position, and the results have been markedly improved. He has used eserin in the treatment of tympanitis following diffuse peritonitis but is not so enthusiastic concerning the results as others are. Contributory to the improved results in the treatment of general peritonitis are the facts of improved technic, early recognition of cases and the inclusion in the group of general peritonitis of cases easily cured by proper treatment. He described a simple modification of the enemata by which the irrigating rectal injection is carried high into the rectum and, after being allowed to escape, repeated. Peristalsis is thus accomplished and large quantities of gas allowed to escape. He finds it more effective than the use of eserin, and being a mechanical procedure, may be safely left in the hands of the nurse. He thinks Dr. Deaver's stand in regard to the giving of morphia an extreme one. While the excessive administration of morphia is wrong, the entire withholding of it he regards as unnecessary and cruel.

Dr. Arthur D. Bevan, of Chicago, in some cases of fluid in the peritoneal cavity, employes a female glass catheter, using it as a pipette, taking up the pus not only in the cul de sac, but in other directions. Many cases in which there is free pus, and cases of duodenal ulcer operated upon early in which there is a considerable amount of fluid, are regarded by him as cases in which general peritonitis has been prevented by early interference and not cases of general peritonitis. This obviously has a determining influence upon statistics. He has found nitrous oxide gas of much value as an anesthetic. Frequently the giving of either ether or chloroform in these cases turns the scale between recovery and death. He disagrees with Dr. Murphy regarding the danger of washing out the peritoneal cavity, believing that irrigation is good surgery and that it can be done without loss of time. In the matter of drainage he favors the large cigarette drains in preference to rubber tubing.

Dr. Dudley P. Allen, of Cleveland, agrees with Dr. Bevan that the washing out of septic material from the peritoneal cavity is a valuable aid in treatment. He places the patient on the side when draining to have the aid of gravity, and limits the washing to the area involved.

Dr. Joseph Ranschoff, of Cincinnati, feared that if the dictum went out to the general profession that free general peritonitis recovers in the proportion of 44 to 3, the average practitioner would delay in seeking surgical aid with the thought in mind that if the patient did get worse he had 44 out of 47 chances of getting well. He asked Dr. Murphy in closing to state in how many of the 47 cases the operation was done after four or five days subsequent to the development of symptoms of general peritonitis, and in how many cases he operated in which death seemed imminent.

He called attention to the general use of the word "peritonitis," suggesting that but few understand by the term exactly the same thing. Free fluid in the peritoneum is not necessarily infected, and its presence should not be regarded as evidence of peritonitis until cultures show infection.

Dr. A. T. Bristow, of Brooklyn, showed a device which regulates the passage of the fluid to about 90 drops per minute in rectal irrigation.

Dr. George E. Armstrong, of Montreal, has followed the teaching of Dr. Murphy in the treatment of peritonitis with very great improvement in results. He attaches great importance to induced drainage by rectal injections in the sitting position. In two cases recently under his care with persistent vomiting and with swelling in the epigastric region, he thinking the condition due to retromesenteric pressure on the transverse duodenum, reversed the position of the patients from the Fowler to the Trendelenburg with satisfactory results.

Dr. John C. Oliver, of Cincinnati, inquired of Dr. Murphy whether his method of treatment had been applied to gunshot wounds of the abdomen, especially to those cases in which injury had been inflicted several hours before operation. He asked because, while there might be an honest difference of opinion concerning the forms of peritonitis following appendicitis or perforated gastric or duodenal ulcer, all agree that the form of peritonitis following gunshot wounds is apt to be general. Therefore, the results of treatment in that class would be of value.

Dr. James E. Moore, of Minneapolis, said he had no word of criticism of Dr. Murphy's paper, wishing only that he was able by any means to secure results so good. He protested against the dictum laid down by Dr. Deaver that abdominal cases should be deprived of morphia. Concerning this question he said his position was like that of the old man who, when he came to die, told his son he *knew* honesty was the best policy because he had tried both ways. In the beginning of his abdominal surgery he had withheld morphia, but after having had an operation himself he insisted upon having morphia. He has since given it to his patients and his results are improved.

Dr. Maurice H. Richardson, of Boston, said that peritonitis still remains the most important disease with which he has to deal, causing more deaths in his own cases, those of his colleagues and in literature than any other disease. He referred to the evolution in treatment from the time when a man's abdomen was made to look like a colander to the present, when a small incision and very little disturbance of the abdominal viscera are the rule. He could criticise only in the most favorable way Dr. Murphy's method. In his hospital service he does not know that they use the method exactly, though they do not disturb things very much. They do not wash out. They do not wipe extensively. They do not make multiple incisions. They depend upon rectal lavage and rather than have patients toss all night they give small doses of morphia.

Dr. John B. Roberts, of Philadelphia, said that Dr. Murphy's brilliant paper disproved effectually the oft-repeated statements of those operators who for years have contended that all cases of perforative appendicitis and similar lesions should be treated by an *insistent* search for the offending organ. Also it has shown effectively their error in believing that patients after abdominal section or with peritonitis from perforation should be tortured by persistent immobility in the dorsal recumbent position, by absolute deprivation of water and by the ante- and post-operative withholding of morphia and pain-obtunding drugs. Dr. Murphy's results thus justified those who for twenty years have contended against such surgery.

Dr. Richard H. Harte thought it obvious that no hard and fast rules could be laid down in the treatment of peritonitis, each case being treated rather according to the conditions found. He thought error sometimes existed in the use of rectal irrigation in not having the tube of sufficient size and held at a proper height to favor the ready flow of the fluid toward the bowel. He described a frame made to support the weight of the patient by the buttocks and thighs as a satisfactory method of maintaining the Fowler position. He approves the plan of having patients sit up even in the typhoid perforation cases in which the perforation occurs at the end of a very long illness. He favors gauze for drainage rather than tubes.

Dr. M. L. Harris, of Chicago, has tried repeatedly the principles laid down by Dr. Murphy, and his patients get well. Relative to the inquiry of Dr. Allen concerning gunshot wounds of the abdomen, he had had within a few months 17 cases of these wounds involving the intestines in which there were from one to eight perforations. Every case was operated upon early, all were drained and all recovered.

Mr. B. G. A. Moynihan, of Leeds, England, said that at the Leeds' Infirmary they grouped their cases according to those occuring previous to their having learned of Dr. Murphy's treatment and those occurring subsequently. Those of the former group they had been accustomed to lose. Those of the latter usually recovered. Only in very insignificant particulars do they vary from the method laid down by Dr. Murphy. They operate in the least possible time; in drainage employ what they term the split tube. This is a large-sized rubber tube split along the wall of one side which, when in position, drains along its whole length and can collapse if pressure from tissue occurs. He takes issue with Dr. Deaver in the matter of morphia, a small hypodermic being given in every case before the patient leaves the operating table. No house physician, however, is allowed to repeat the dose without instruction from his superior officer. They usually do not employ general anesthesia, but operate under stovaine with lumbar anesthesia. An advantage of this method is the passing of abundant quantities of flatus. This makes the operation distinctly easier. The patients are placed in bed in an exaggerated Fowler position. The position is maintained by a bolster beneath the buttocks and thighs attached by straps to the head of the bed. No restrain is put upon the amount of water the patient desires to take, for the nurse leaves a vessel containing water on the table beside the bed.

Dr. Murphy, in closing, emphasized his positive conviction that every case of general perforative peritonitis ought to get well if properly handled. Such handling, however, involves timely action, intelligent action and the following of definite lines to results. Answering Dr. Ranschoff's question, he said he did not have any cases four or five days old and trusted he never would have. All of his cases were under forty hours. All cases should be under twenty-four hours, and under twelve would be better. When surgeons appreciate this fact the same results as seen in early operations for appendicitis will obtain in peritonitis. Dr. Murphy does not make the differentiation of Dr. Bevan between the type of cases with intestinal leakage without peritoneal inflammation and the type with intestinal leakage with peritoneal inflammation. The presence of a yellow creamy fluid in the peritoneum does not constitute peritonitis. There must be a perforation of the canal and a direct communication from the lumen of the canal into the free peritoneal cavity. The free yellow creamy fluid is often a conservative fluid carrying away infective organisms. The short duration of the anesthesia as brought out by Dr. Bevan he regards as important and the operation under nitrous oxide is to be desired. The 48 cases reported included every case of general suppurative perforating peritonitis coming under his observation and were not elected cases.

(To be continued.)

Book Reviews.

Cancer. Relief of Pain and Possible Cure. By Skene Keith, M.B., F.R.C.S. (Ed.), and George E. Keith, M.B., C.M. New York: The Macmillan Co. 1908.

This interesting little book is addressed to general practitioners, but it should be found useful by all surgeons and physicians. The authors propose to find some method for prolonging the life of cancer patients and for making that life endurable. The writers recognize the value of operations, but they recognize also how frequently cancers are inoperable and how frequently they return.

The book is divided into three sections: an introduction on the method of treatment, a section on cases of cancer, and a section on cases of sarcoma.

The writers discuss various well-known methods of alleviating the distressing symptoms of advanced cancer and tell at considerable length of a method which has proven serviceable in their hands — the hypodermic use of the arseniate of iron, the cacodylate of iron and the cinnamate of sodium. One recognizes at once that these are familiar remedies, but we believe the authors of this book have proven their contention when they tell us that by their method of administration these drugs are found to be more efficacious than formerly was thought. General practitioners, dispensary physicians and hospital internes will do well to consult this book.

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DR. CHARLES HARRINGTON.

Dr. Charles Harrington, Professor of Hygiene at the Harvard Medical School, and Secretary of the Massachusetts State Board of Health, died suddenly in England, Sept. 11. The immediate cause of death as subsequently determined was an affection of the heart.

In considering Dr. Harrington's notable career, several matters force themselves particularly upon our attention. In the first place, he held two positions quite diverse in character with equal success. As an instructor at the Medical School he was a popular lecturer and was always able to interest his students in the very practical subject of public hygiene. He was himself a devoted laboratory student and had spent much time in personal chemical studies relating to his general subject. Quite apart from this unassuming and private phase of his career, his merits were early recognized as an organizer and as a public servant of the best sort. This led to various appointments in the service of the state, culminating in the position which he held at the time of his death as secretary of the Massachusetts State Board of Health. It is not our purpose here to enter into detail regarding his extraordinary activities in the public service, nor to dwell upon the respect in which he has always been held by welldoers and the wholesome fear with which evildoers have regarded him, but rather to draw attention to the fact that he possessed in unusual degree those qualities which made possible a most effectual combination of laboratory studies with affairs of state and national importance.

It is becoming more apparent as the years go by that the relations between the university in its broadest aspects and the public welfare are assuming increasing importance and that the services of teachers and laboratory students are being increasingly sought in the conduct of affairs concerning the people at large. Dr. Harrington, through the opportunities offered him, and particularly through his peculiar aptitude in accepting such opportunities, represented the very best type of this tendency. He was able to secure and retain the confidence of all classes in the community whatever their intellectual training might be and whatever attitude they might take toward questions at issue. He was honest, aggressive and stood invariably for what he and the best opinion of his contemporaries regarded as the right. This attitude led him, through the encouragement of the State Board of Health which he represented, not only to inaugurate salutary legislation, but also to force it through the legislature as a less vigorous and determined man would have been utterly unable to do. His work, unfortunately for the state, had hardly more than begun in his capacity as secretary of the Board of Health, and it is, therefore, with peculiarly keen regret that his death must be recorded at the early age of fifty-two years. It is hard as yet to estimate the full extent of his loss, but we are confident that it cannot be said of him that there are others immediately at hand to fill his place. No doubt his place will be filled and the work which he has done so much to foster progress to further accomplishment. This can hardly be questioned in view of the fact of the continued activity of the chairman of the State Board of Health, Dr. Henry P. Walcott. The association of these two men has been a peculiarly fortunate one, and whatever the future may bring forth, it cannot be questioned that Dr. Harrington's untimely death has been a blow from which it will be hard to recover.

In his capacity as a public servant, Dr. Harrington was widely known, not only in this state, but throughout this country and also abroad. He had for many years been a contributor to this Journal and latterly had had special charge of the Department of Hygiene. His writing was incisive, quick in recognition of the faults or the merits of those who fell under his criticism, but behind whatever he might say was a kindliness of spirit which was widely recognized, not only by his intimates, but also by the larger reading public. His loss as a severe but generous critic will be deeply felt. Those who were fortunate enough to come into close personal relations with him were privileged to see certain qualities which undoubtedly played an important part in his public success. He was a peculiarly genial and companionable man, and he had in addition an unusual development of that most happy quality, a saving sense of humor. In the perplexities of his professional work this attribute no doubt served him well, and in his more personal relations it rendered him a companion not easily forgotten by those with whom he had been closely associated. His death will be mourned, not only by the state and the public which he served, but also by an exceptionally wide circle of friends with whom he stood on a basis of charming intimacy.

THE PREVENTION OF BLINDNESS.

Since the medical profession is now recognizing its responsibility to educate the laity in the principles of disease prevention, it is pertinent to observe that nowhere should such teaching be more advantageous than with regard to the contagious inflammations of the conjunctiva; and especially by reason that "the amount of blindness dependent on the neglect of proper prophylactic care or right treatment of ophthalmia neonatorum has not decreased in a degree proportionate to the advance which has been made on other lines in general sanitation."[1]

Theoretically all ophthalmia neonatorum is preventable. The prophylaxis is simple. It would seem that a great deal of inflammation in and about the orbit becomes aggravated and a benign condition not infrequently is made malignant by the use of "midwives'" remedies. But when we consider the part which midwive splay we come upon ignorance truly difficult of characterization. In New York City over 40% and in Chicago 86% of the births among the very prolific Italians are reported by midwives; and "the blindness of the child is but one of the many disasters that attend their maladministrations," "ignorant, untrained and unclean" as the majority of them are, and in many communities neither licensed nor registered nor required by law to fit themselves for the responsibilities they so lightly assume.

In the report here referred to one finds an adequate and comprehensive grasp of the subject. One is shocked to note that among the new admissions in the fall of 1907 to ten schools for the blind (representing eight states maintaining high standards of medical education and general sanitation, and the no doubt equally advanced Province of Ontario), the average of cases of ophthalmia neonatorum was 25.21% children needlessly blind; that the average percentage for eight years in the Pennsylvania School for the Blind was 33.36 of the whole number admitted.

It is refreshing to observe the interest manifested in this subject by many national, state, county and other medical societies; how co-operation is being enlisted from the Canal Zone, Hawaii and the Philippines. The constituted authorities are playing their most important part. The Department of Health of New York City, for instance, has for several years maintained a hospital for the treatment (with operation when necessary) of school children having contagious trachoma, coincident with which work much information is disseminated concerning ocular hygiene. County and state boards of health are coming to hold themselves responsible for the instruction and support (in part at least) of the destitute blind, for economic reasons as well as for others. The federal government has taken cognizance of the subject, and it has been recommended in the census for the deaf and blind that "more general attention be given to measures for the prevention of ophthalmia neonatorum." A world congress is also being proposed on the prevention of blindness, a general organization of all the forces which are enlisted in this beneficent work. Among co-ordinating activities we recognize with the utmost gratification those which the laity both as individuals and in association are contributing. For example, there is the Massachusetts Blind Association, which publishes its important journal, the *Outlook for the Blind*, and the Buffalo Association for the Blind, which is promulgating its admirable circular, "Stop Blindness," causes and symptoms being set forth in simple language, with the sensible precaution to consult medical men when there is danger of this affliction.

MEDICAL NOTES.

Cholera in Russia. — Late reports show that cholera in St. Petersburg has assumed menacing proportions. An official announcement, dated Sept. 14, states that from noon of Sept. 12 to noon of Sept. 14, 256 cases occurred in the city with 64 deaths. The disease is chiefly active among the lower classes living under poor sanitary conditions.

Report of Henry Phipps Institute. — The fourth annual report of the Henry Phipps Institute for the Study, Treatment and Prevention of Tuberculosis, covering the year Feb. 1, 1906, to Feb. 1, 1907, has recently been distributed. The report fills 430 pages from the pens of thirteen contributors. The articles are both clinical and pathological in type and deal with the most diverse branches of the subject. The society is evidently collecting a vast number of statistics and observations which cannot fail to be of value as the work of prevention develops.

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[1] Report of the Committee on Ophthalmia Neonatorum of the American Medical Association. *Jour. Am. Med. Asso.*, March 23, 1908.

Physicians' Fees in France. — According to the *New York Medical Journal*, during the last ten years the number of practising physicians in France has been nearly doubled. There are now nearly 20,000 physicians in the republic, and about 2,000 are graduated from the medical schools each year. As the result of this competition doctors' fees are very small in France, in some districts one franc being all that is paid for a doctor's call.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Sept. 15, 1908, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 44, scarlatina 27, typhoid fever 42, measles 15, smallpox 0, tuberculosis 44; cerebrospinal meningitis 0.

The death-rate of the reported deaths for the week ending Sept. 15, 1908, was 17.61.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Sept. 12, 1908, was 223, against 201 the corresponding week of last year, showing an increase of 22 deaths and making the death-rate for the week 18.79. Of this number 118 were males and 105 were females; 218 were white and 5 colored; 161 were born in the United States, 59 in foreign countries and 3 unknown; 51 were of American parentage, 148 of foreign parentage and 24 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 47 cases and 6 deaths; scarlatina, 26 cases and 0 deaths; typhoid fever, 31 cases and 3 deaths; measles, 19 cases and 3 deaths; tuberculosis, 63 cases and 21 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 9, whooping cough 2, heart disease 19, bronchitis 4 and marasmus 10. There were 15 deaths from violent causes. The number of children who died under one year was 78; the number under five years 104. The number of persons who died over sixty years of age was 46. The deaths in public institutions were 92.

Cerebrospinal meningitis, 1 case.

Services for the Late Dr. Charles Harrington. — Memorial services will be held for the late Dr. Charles Harrington on Friday, Sept. 18, at three o'clock, at Emmanuel Church, Newbury Street, Boston.

Boston Floating Hospital. — The fifteenth season of the Boston Floating Hospital ended Sept. 15. The summer's work is regarded as the most successful in the history of this charity, and fifty per cent more has been accomplished than last year. The year ended with a reception and entertainment on the boat, with various recognitions of work done by officers of the boat, physicians and nurses.

Ether Day at the Massachusetts General Hospital. — The sixty-second anniversary of Ether Day will be observed at the Massachusetts General on Oct. 16. An address will be made on that occasion by Dr. William H. Welch, of Baltimore. The observation of this day in some form has become a fixed custom of the hospital.

Bulletin of the Harvard Medical Alumni Association. The current number of the *Bulletin* of the Harvard Medical Alumni Association contains an account of the courses and methods of instruction now offered in the chief departments of the Harvard Medical School, written by the heads of departments or under their supervision. From the accounts here given one may gain an accurate idea of the aims and methods now in vogue at this medical school. The number is concluded by a sketch of the life and activities of Drs. R. H. Fitz, William L. Richardson and John Collins Warren, all of whom have recently resigned their professorships at the medical school. Dr. A. K. Stone writes the account of Dr. Fitz, being a reprint from the Festschrift number of this Journal, for May 7, 1908; Dr. George B. Shattuck writes of Dr. Richardson and Dr. J. G. Mumford of Dr. Warren. This number of the *Bulletin* is of particular interest at this stage of the history and development of the medical school.

NEW YORK.

Water of Delaware River. — Dr. Madden, mayor of Trenton, N. J., has vetoed an ordinance passed by the city council appropriating $125,000 for the purchase of a new forcing pump, on the ground that the use of the water of the Delaware River will soon have to be discontinued by the municipality on account of the increasing pollution of the stream. As a medical man he sees grave danger in the further employment of this source of supply, and therefore regards the appropriation of money for a new pump as a useless expenditure.

Mortality Statistics. — The condensed quarterly report of the Bureau of Records of the City Health Department states that for the quarter ending June 30, 1908, the death-rate was 16.57, as against an average of 18.55 for the same quarter of the preceding five years. Comparing the number of deaths from the principal causes with those of the preceding quinquennial averages for the corresponding quarters, corrected to correspond with the increase of population, the following results appear: *Decreases:* Typhoid fever, 33; malarial fevers, 14; smallpox, 4; whooping cough, 59; diphtheria and croup, 92; influenza, 38; pulmonary tuberculosis, 190; cerebrospinal meningitis, 438; apoplexy, 184; acute bronchitis, 197; chronic bronchitis, 23; lobar pneumonia, 598; cirrhosis of the liver, 34; Bright's disease and acute nephritis, 169; old age, 56; accidental deaths, 278; homicides, 9; under one year, 116; under five years, 57; five to sixty-five years, 1,526; sixty-five years and over, 316; all ages, 2,413. *Increases:* Measles, 77; scarlet fever, 292; cancer, 27; organic heart diseases, 203; bronchopneumonia, 35; diarrheal diseases under five years of age, 38; suicides, 61.

Inspection of Water Sheds. — Under a recent amendment to the law, giving the State Health Department authority to order regular or special inspections of watersheds, orders were served during the month of June upon over fifty different boards of water commissioners and water companies, requiring an immediate inspection of the watersheds under their control, and a report to the department of the violations which might be disclosed. This was the first time in the history of the state that state authority had been exercised in a widespread and systematic endeavor to secure better conditions upon the watersheds furnishing municipalities with public supplies through a thorough enforcement of the rules adopted by the department for their protection. Reports of the results of such inspections were ordered sent to the department, together with instances of violations of rules in cases where the law had been complied with by the serving of the proper notices, but nothing had been done by the owners of the properties to abate the violations. The majority of these reports have now been received by the department, and they show that on the whole the public water supplies are well protected from contamination. In cases where violations have been reported the department has, after corroboration of the facts revealed by the inspections, called upon the boards of health within whose jurisdiction the violations lie to take the necessary steps to abate them.

Congress of Playground Association of America. — The second annual Congress of the Playground Association of America was held at the American Museum of Natural History, on Sept. 8, 9, 10, 11 and 12, and was attended by more than two hundred delegates, representing nearly every city of importance in the United States. The Secretary, Dr. Henry S. Curtis, reported that 177 cities, with populations of over five thousand each, were now maintaining playgrounds, and that in the whole country $12,000,000 was being spent annually in establishing new playgrounds and maintaining those already in use. More than a third of this expense, he said, was met by voluntary contributions. The city of Pittsburg had this year adopted a plan calling for thirteen recreation centers, several of which were to have field houses, at a total cost of $2,000,000. The greatest need for playgrounds, however, was in the section of the country south of Mason and Dixon's line, where the new child labor laws were forcing thousands of children out of the factories. On the evening of Sept. 10, Governor Hughes made an address, and other speakers on this occasion were Dr. Luther H. Gulick, president of the association, and Dr. Woods Hutchinson. The latter spoke on the question "Can the child survive civilization?" and in the course of his remarks he expressed the sentiment, "Better a playground without a schoolhouse than a schoolhouse without a playground." On one of the days the delegates visited, in a body, the Children's Farm in De Witt Clinton Park, the recreation pier at the foot of East 24th Street, and a number of the public playgrounds in Manhattan and Brooklyn, and on Sept. 12, the Congress was concluded with an outdoor festival in Van Cortlandt Park, in which several thousand children participated.

Death-Rate in August. — The death-rate in the city during August was the lowest for that month ever recorded. The weekly reports of the Health Department show that the mortality represented an annual death-rate of 15.99, against 17.87 in July and 19.94 in August, 1907. The corrected death-rate, excluding non-residents and infants under one week old, was 15.10. Among the diseases in which there was a diminished fatality were the following: The weekly average of deaths from measles declined from 11.25 in July to 5 in August; the weekly average from scarlet fever, from 10.75 to 4.5; from diphtheria and croup, from 23.5 to 13; from epidemic cerebrospinal meningitis, from 7.5 to 6.25; from pulmonary tuberculosis, from 161.75 to 147.75; from acute bronchitis, from 8 to 7; from diarrheal diseases, from 412.75 to 331.25; from diarrheals under five years of age, from 399.25 to 311.5 (as against 414.5 in August, 1907); from cancer, from 64.75 to 63.25; from apoplexy, congestion and softening of the brain, from 28 to 27; and from Bright's disease and acute nephritis, from 82.75 to 72.75. Among the diseases in which there was an augmented mortality were the following: The weekly average of deaths from typhoid fever increased from 11.5 to 16.25; from whooping cough, from 5 to 6.75; from pneumonia, from 34.75 to 36.25; from bronchopneumonia, from 47 to 50.75; from organic heart diseases, from 109.75 to 110.25; and from cirrhosis of the liver, from 16 to 20.75. It is a somewhat remarkable fact that the death-rate in August in the Borough of Richmond (Staten Island) which is largely rural in character, was almost double that of the Borough of Manhattan, with all its crowded tenements, the figures being respectively 28.06 and 15.98. The lowest death-rate in any of the boroughs was in Brooklyn, where it was only 15.26.

Death by Electricity. — Dr. George F. Shrady, one of the city coroners, and a son of the late Dr. George F. Schrady, editor of the *Medical Record*, having appeared in a public communication in which he questions the power of electricity to kill and asserts the possibility of resuscitation after apparent death in the electric chair, Dr. A. D. Rockwell, the well-known electro-therapeutist, has published a forcible reply. He states that as a member of the advisory commission appointed by the state, he was present at Sing Sing prison to witness the executions of the four prisoners following the more or less bungling attempt upon Kemmler, the first subject of the new law. In each case death resulted instantly and quietly. There were no contortions or burning or anything unpleasant, with the exception of the sacrifice of a human life. This whole matter, he says, has been thoroughly threshed out before, and he regrets that Dr. Shrady should have again directed attention to it. D'Arsonval's opinion given years ago (which was quoted by Dr. Shrady) has been proved by careful tests to be quite unworthy of consideration. These tests were made upon animals in the presence of the commission alluded to, and in every case failed absolutely to resuscitate. Yet in the experiments made the same apparatus was used most successfully in inducing artificial respiration in cases of poisoning and apparent death by drowning. Before execution by electricity became a law, 19 animals, including bulls, horses, calves and dogs, were killed by electricity in the presence of the commission. None of the animals revived spontaneously, and none responded to artificial treatment after the application of the current. Dr. Rockwell concludes in the following words: "If the law must kill, let it kill decently and painlessly. In the electric current we have a method sure, decent and painless. It is a mathematical impossibility that any human being, receiving in proper form an electrical current of lethal energy, should appreciate, even for a fraction of a second, the slightest pain. It has been ascertained that the brain is one-twenty-fifth of a second in recognizing an impression and one-twenty-eighth of a second in telegraphing that an impression has been received, and as nerve force travels only about one hundred feet a second, while the velocity of electricity is millions of times greater than this, the brain has absolutely no time to appreciate a sense of pain."

Current Literature.

Medical Record.
July 18, 1908.

1. Ward, H. B. *The Standard of Medical Education.*
2. Delavan, D. B. *The Etiology of Paralysis of the Recurrent Laryngeal Nerves of Peripheral Origin.*
3. *Barney, C. N., and Brooks, R., Jr. *The Ophthalmo-reaction to Tuberculin Tests in 321 Cases, including 250 Tuberculous.*
4. Caravia, E. *Note on Deutschmann's Serum against Infectious Diseases.*
5. McLaughlin, W. B. *A New and Efficient Method of Room Disinfection. Preliminary Announcement.*

3. Barney and Brooks report their observations with the ophthalmo-tuberculin reaction in 321 cases, including 250 tuberculous. Owing to the peculiarly favorable conditions in which their work was done, their results must carry great weight. Their cases were taken from patients at the Fort Bayard General Hospital and from attachés and attendants at the hospital. It was possible to observe these cases continuously for a number of months, so their work could be carefully controlled by observation of the clinical condition. Their test solution was a 1% solution of tuberculin precipitate, the dose being a 25 mgm. drop in each case. The method of preparation of the solution and the technic of administration are carefully described. Their classification is a modification of Turban's scheme adopted by the National Association for the Study and Prevention of Tuberculosis. Of 191 active cases, 98% showed a positive reaction; of 20 cases classed as inactive but not arrested, 75% reacted; of 10 cases classed as arrested, 40% reacted; of 30 classed as apparently cured, 23% reacted; of suspects, out of 10 cases, 60% reacted, and

finally, of non-suspects, out of 61 cases, 10% reacted. Five cases treated with the filtered tuberculin all reacted. In the cases retested in the other eye there was no evidence of anaphylaxis.

The authors discuss the different theories to account for the reaction. They believe that their work makes it clear that the occurrence of the reaction depends on the amount of poison the patient is receiving from his lesion rather than upon the extent of his ability to resist. They see no prognostic value to the test. The diagnostic value should be as great at least as the Widal reaction.

If no reaction is obtained to a properly given dose of a quarter of a milligram in an individual, the chances are 97 out of 100 that he has no active tuberculosis. If reaction to this dose occurs in an apparently healthy person, the probabilities are that he has a small focus of tuberculosis, either active or clinically inactive, together with strong resistance; but as this has not been unequivocally demonstrated, and as the lesion, if it does exist, may never give symptoms, it is not wise in practise to assume that the occurrence of reaction invariably denotes the occurrence of tuberculosis; the occurrence of reaction in an apparently healthy person should, however, put the physician on the watch to detect the earlier symptoms of tuberculosis in case any should appear. [W. B. R.]

July 25, 1908.

1. Birkett, H. A. *A Brief Account of the History of Medicine in the Province of Quebec.*
2. Deaderick, W. H. *The Pathogenesis of Pernicious Malaria.*
3. Titus, E. C. *An Improved Treatment of Gonorrheal Arthritis (So-Called Gonorrheal Rheumatism).*
4. Ellis, R. *Unusual Cardiac Murmurs.*
5. Powers, W. H. *Tetanus; with a Report of a Case treated by Intraspinal Injections of Magnesium Sulphate.*

New York Medical Journal.

Aug. 1, 1908.

1. Fischer, L. *Treatment of Laryngeal Stenosis, including Intubation by the Dorsal Method.*
2. Horsley, J. S. *A Method for Preventing Infection from the Skin during Surgical Operations.*
3. Rhodes, J. E. *Sarcoma of the Tonsil.*
4. Watson, H. G. *Syphilis communicated in Assault and Battery.*
5. Knott, J. *Dies Caniculares.*
6. Bentley, W., and LeRoy, B. R. *The Solvent Action of the Sulphocyanates upon the Lime and Magnesium Deposits in the System.*
7. Sutton, R. T. *Impetigo Contagiosa.*

Aug. 8, 1908.

1. Wright J. *The Tonsil from an Evolutionary Point of View.*
2. Eastman, J. R. *Confessions of a Yeoman Prostatectomist.*
3. Muren, G. M. *Real Conservatism in the Treatment of the Prostatic.*
4. Steinhardt, I. D. *Anterior Poliomyelitis.*
5. Archambault, L. *Acute Anterior Poliomyelitis in the Adult, with Exhibition of a Case.*
6. Rose, A. *Malaria in Greece.*
7. Nascher, J. L. *Prostitution.*
8. Donnelly, J. F. *How Plague is Spreading in Venezuela and Trinidad.*

The Journal of the American Medical Association.

Aug. 1, 1908.

1. Loeb, H. W. *The Borderline of Laryngology, Rhinology and Otology.*
2. Bryant, W. S. *Middle-Ear Sclerosis or Atrophic Middle-Ear Catarrh.*
3. Barker, L. F. *Psychotherapy.*
4. McElroy, J. B. *Aneurism of the Heart. With Report of a Case associated with Mediastino-Pericarditis.*
5. Deaver, J. B. *Chronic Pancreatitis.*
6. Haggard, W. D. *Pancreatitis in its Relation to Gallstone Disease.*
7. *Dixon, S. G. *May not Drinking Water, when polluted with Sewage, be One Medium of Dissemination of the Tubercle Bacillus?*
8. Power, J. E. *The Treatment of Inflammation.*
9. *Briggs, E. C. *Interstitial Gingivitis.*
10. Arnold, H. D. *Physics of Physical Signs, with Special Reference to the Respiratory Murmur.*
11. Bierring, W. L. *Remissions in Pernicious Anemia.*
12. Bellamy, R. H. *Pellagra; Its Occurrence in This Country; Report of a Case.*
13. Greene, D. W. *The Association of Age and Incipient Cataract with Normal Pathologic Blood Pressure. A Study of These Conditions in 400 Men above Sixty Years of Age.*

7. Dixon has found tubercle bacilli in smears made from sedimented sewage of tuberculosis hospitals and offers the hypothesis that drinking water, when polluted with sewage, may be one medium of dissemination of the tubercle bacillus.

9. Briggs discards Riggs' disease and pyorrhea alveolaris in favor of the term "interstitial gingivitis," inasmuch as it has been pointed out that in all cases there is an underlying inflammation of the connective tissue of the gingiva. Briggs believes that it is a local expression of some one of many systemic disorders. For preventive treatment he urges proper food eaten properly, with the thorough use and care of the teeth. For medical treatment he advises phosphate of soda as a routine and the salicylates or potassium iodide in the acute stage. Calcium sulphid he considers efficacious. Locally smoothness and cleanliness of the roots are to be obtained at any cost. [R. I. L.]

Aug. 8, 1908.

1. Beck, J. C. *A New Method of External Frontal Sinus Operation without Deformity.*
2. Cott, G. F. *Facio-Hypoglossal Anastomosis.*
3. Hawkes, E. Z. *A Method of Complete Nephro-Ureterectomy for Renal Tuberculosis in Women.*
4. *Gordon, A. *A Special Diagnostic Phenomenon in Cerebellar Diseases. Report of 6 Cases, 4 of which came to Autopsy.*
5. Rhein, J. H. W. *Pathologic Report of the Nervous System in Spondylose Rhizomelique.*
6. Stern, H. *A Consideration of the Compensatory Diarrheas.*
7. Summers, J. E., Jr. *Invagination of Limited Annular Gangrene of the Small Bowel versus Resection.*
8. Hirschfelder, A. D. *Recent Studies on the Circulation and their Importance to the Practise of Medicine.*
9. *Vanderhoof, D. *A Clinical Method for the Determination of the Sodium Chlorid Content of the Blood and Other Body Fluids.*
10. Hubbell, A. A. *Relation of So-Called Ophthalmic Migraine to Epilepsy.*
11. Friedenwald, H. *Differential Diagnosis of Affections of the Optic Nerve.*
12. Sollmann, S. *A Comparative Study of the Dosage and Effects of Choral Hydrate, Isopral and Bromural on Cats.*
13. Brose, L. D. *The Treatment of Some Forms of Lens Displacement other than those of Traumatic Origin.*

4. Gordon calls attention to a special diagnostic phenomenon in cerebellar disease which he has observed in six cases and verified by autopsy in four. The phenomenon is the very marked increase of vertigo and headache when the head is turned forcibly toward the side of the lesion. The heads of the various patients were eventually all inclined to the side opposite the lesion.

9. Vanderhoof utilized Volhard's method of quantitative chlorid determination for estimating the sodium chlorid content of the blood and body fluids and found it accurate. The method requires 1 ccm. of blood aspirated from a vein. The proportion of sodium chlorid in the plasma of the blood was found constant in conditions of health and disease. The author concludes that the term chloridemia is unjustified. [R. I. L.]

The Lancet.

Aug. 1, 1908.

1. Snell, S. *Presidential Address delivered at the 76th Annual Meeting of the British Medical Association.*

2. *Fowler, J. K. *Address in Medicine on Modern Medicine.*
3. Smith, R. J. P. *Address in Surgery on Prophylaxis in Surgery.*
4. Brehaut, A. H. *Some Blood Changes in Ankylostomiasis.*
5. *Keyser, C. R. *Case of Carcinoma of the Jejunum; with Remarks on Malignant Disease of the Small Intestine.*
6. Gray, H. T. *Note on the Treatment of Erysipelas.*
7. *Duprey, A. J. B. *Malarial Cirrhosis of the Liver.*
8. Rob, J. W. *An Unusual Fracture of the Clavicle.*

2. Fowler, in an interesting address in medicine at the opening of the meeting of the British Medical Association takes up in a more or less general way the processes of bacterial immunization, the results of vaccine-therapy, the opsonic index and the use of tuberculin, from which he contrasts the state of affairs in 1890, after Koch's discovery, to the present time; the theory of auto-inoculation, pyrexia in pulmonary tuberculosis, the opsonic index and graduated labor and the sanatorium treatment and the use of tuberculin.

5. Keyser describes in some detail a case of primary carcinoma of the jejunum with photographs of the microscopic appearances, and analyzes 12 other cases of this condition in regard to open tumor, vomiting, obstruction, sex and age.

7. Duprey describes 9 cases of malarial cirrhosis of the liver, discussing the treatment as regards preventing this condition and after the cirrhosis has developed.

[J. B. H.]

Aug. 8, 1908.

1. *Glynn, T. R. *Lecture on Intrathoracic New Growths.*
2. *Overland, B. *Human Tuberculosis and Cattle Tuberculosis; Investigations as Regards 97 Norwegian Farms.*
3. Cuff, A. W. *Treatment of Appendix Abscess.*
4. *Herschell, G. *On the Use of Selected Lactic Acid Bacilli and Soured Milk in the Treatment of Some Forms of Chronic Ill Health.*
5. Puddicombe, T. P. *Note on a Case of Diphtheria and Impetigo Contagiosa in the Child.*
6. Ritchie, J. *Notes on Experiments as to the Constancy of the Carbohydrate Reactions of the Streptococci.*
7. Williams, R. S., Murray, H. L., Rundle, C., Williams, A. E. *Preliminary Note on an Organism discovered in a Case of Epidemic Diarrhea.*

1. Glynn gives an interesting clinical lecture covering the subject of intrathoracic new growths, speaking chiefly on the various forms of such new growths, the symptoms and the diagnoses.

2. Overland has made a careful study of 97 Norwegian farms, in the neighborhood in which he lives, in regard to the presence of human and bovine tuberculosis and the relationship between the two. In the first part of his paper he cites the arguments brought up by the adherents of the two sides of this question. He then studies the farms under four headings: (1) Those farms where there is no positive tuberculin test in the livestock and where he has found no cases of tuberculosis among the occupants. (2) Farms with no positive tuberculin test in the livestock, but with cases of tuberculosis among the occupants. (3) Farms with positive tuberculin test in the livestock and no cases of tuberculosis among the occupants. (4) Farms with a positive test in the livestock and with cases of tuberculosis among the occupants. He believes from the limited numbers which he has studied, that tuberculosis in man and tuberculosis in cattle have a certain relation to each other, as the reaction in cattle on farms where human tuberculosis was present occurs nearly three times as frequently as on farms where this disease was not found. Where tuberculosis in the cattle does not exist, there is found less tuberculosis in the occupants of the farm. Every one seems to agree that livestock in the country ought to be tuberculin tested more than has been the case before we feed children with unboiled milk; whether infection through milk takes place often or seldom, the danger is present and should be encountered with all the means of defense which are at hand.

4. Herschell, after describing the work of Metchnikoff on the use of lactic acid organism in some forms of chronic ill health, speaks of the method of administration of lactic acid bacilli by means of sugar whey, malt extract solution and a preparation of curdled milk. Some form of lactic acid preparation is of value, (1) simply as a food in phthisis and in other conditions where it is important to add to the patient's nourishment. (2) In conditions of abnormal fermentation in the intestine causing chronic ill health either by local irritation or by auto-intoxication, such as certain skin diseases, neurasthenia not obviously due to excessive strain or work, gout, chronic arthritis and arteriosclerosis, certain forms of dyspepsia, chronic diarrhea, colitis and in intestinal indigestion in children. It is important to examine the mouth for septic roots and pyorrhea alveolaris. (3) In order to render the gastro-intestinal tract aseptic previous to an operation upon it. He believes that surgeons have greatly neglected this and advises the use of some form of lactic acid bacilli prior to every operation on the stomach or intestines. (4) In the treatment of some forms of constipation not due to an atonic condition of the intestinal walls. He describes the dose in which the curdled milk should be given and the diet during treatment. He then speaks briefly of the phenomena occurring during the first few weeks of treatment. [J. B. H.]

The Practitioner.

July, 1908.

(*Special Number: Health Resorts and Climatic Treatment.*)

This number of the *Practitioner* is devoted to a general consideration of the effect of the climate on health, particularly for the aged and for children, and in the treatment of pulmonary tuberculosis and other respiratory diseases. It considers in a series of short articles the leading health resorts of the world.

1. Weber, H. (Sir) *On Climates suitable for the Aged.*
2. Carr, J. W. *Health Resorts and Climates for Children.*
3. Weber, F. P. *Change of Air in Young Adult Life and Early Middle Age.*
4. Latham, A. *The Treatment of Pulmonary Tuberculosis.*
5. Ewart, W. *The Evolution of the Preventorium.*
6. Engelmann, G. S. F. *Saline Treatment of Scrofulous Lesions.*
7. Macdonald, G. *Climate and the Nose.*
8. Vogler, A. *The Ems Treatment of Respiratory Catarrhs.*
9. Mackenzie, J. *Spa Treatment of Affections of the Heart.*
10. Weintraud, W. (Prof.) *Treatment of Gout.*
11. Hamel, G. *Zander Method of Treatment.*
12. Hartley, P. H. S. *Configuration, Meteorology and General Health of the Midland Counties of England.*
13. Foulerton, A. G. R. *Climate and Health Resorts of the South Coast.*
14. Nash, J. T. C. *East Coast Climate.*
15. Luff, A. P. *English Spas Considered Therapeutically.*
16. Babbatyne, G. A. *Bath.*
17. Edgecombe, W. *Harrogate.*
18. Forbes, N. H. *Note on Church Stretton.*
19. Williams, W. *Llandrindod.*
20. Charteris, F. J. *Climate and Health Resorts of Scotland.*
21. Lindsay, J. A. *Climate and Health Resorts of Ireland.*
22. Hoggard, W. R. *Influence of High Altitudes.*
23. Brandt, G. H. *The Three Estorils.*
24. Turner, W. *Gibraltar, Algeciras, Ronda.*
25. Hort, E. C. *Italian and Swiss Lakes.*
26. Foster, M. *Italian Mediterranean Seacoast.*
27. Hadfield, P. H. *Health with Pleasure in Norway.*
28. Williams, L. *Some Renal Spas. France, Belgium, Germany, the Austrian Empire.*
29. MacPhail, A. *Health Resorts in Canada.*
30. Coutts, J. A. *The West Indies.*
31. Lishman, F. *The Canaries.*
32. Chaplin, A. *Voyages to the East.*
33. Canney, H. E. L. *Egypt and North Africa.*
34. Murray, C. M., Hayes, W. A. *Health and Travel in South Africa.*

Deutsche Medizinische Wochenschrift. No. 32.
Aug. 6, 1908.

1. Ebstein, W. *Remarks on the Pathogenesis of Urinary Calculus.*
2. *Zuelzer, G., with the help of Dohrn, M., and Marxer, A. *Recent Investigations in Experimental Diabetes.*
3. Wilenko. *The Action of Glutaric Acid on Phloridzin Diabetes.*
4. De Haan, J. *The Susceptibility of Monkeys to Infection with Tubercle Bacilli of the Avian Type.*
5. Siebold, W. *Traumatic Paralysis of the Cervical Sympathetic.*
6. Michelsson, F. *The Operative Treatment of Perforation of the Stomach.*
7. Schaller. *The Value of the Intra-uterine Injection of Steam.*
8. Rimpau and Loewenthal. *The Presence of Intestinal Parasites in the Body outside of the Intestines.*
9. Schultz, F. *The Deep Action of the Röntgen Rays.*

2. Zuelzer describes some very interesting experiments concerning the antagonism between adrenalin and the internal secretion of the pancreas. He has discovered that the glycosuria which follows injection of adrenalin may be certainly prevented by the injection also of pancreatic extract. It makes no difference whether the two are injected simultaneously or the pancreatic extract first, the glycosuria always fails to appear. He believes that pancreatic diabetes, both in dogs in which the pancreas has been extirpated and in man, is a negative pancreas diabetes and a positive adrenalin diabetes; that it is say, it is due to the presence of adrenalin which is not neutralized by the pancreatic hormon. This neutralization probably takes place in the liver. Zuelzer then set out to obtain a pancreas extract which should be effective in diabetes, using animals with adrenalin diabetes to test the strength of his preparation. By taking the pancreas from living animals at the height of digestion and after congestion of the organ, he obtained a very strong extract, which on intravenous injection into dogs with pancreas diabetes diminished the excretion of sugar to a very marked degree. He next tried this extract in a number of cases of diabetes, most of them with acidosis, and obtained considerable success. Acetone and diacetic acid disappeared from the urine and the glycosuria in several cases entirely disappeared. In one instance, he believes that he has cured a case of diabetes complicated with carbuncle. The preparation as at present obtained is very unstable, but he hopes to obtain in the future an extract that will be more effective. In this way it may be possible to tide over diabetic patients who are on the verge of coma or who are about to undergo a surgical operation. [W. T.]

Münchener Medizinische Wochenschrift. No. 31.
Aug. 4, 1908.

1. *Posselt, A. *The Clinical Diagnosis of Sclerosis of the Pulmonary Artery.* (Preliminary communication.)
2. Spielmeyer, W. *Changes in the Nervous System after Stovain Anesthesia.*
3. Galli, G. *Artificial Hyperemia of the Brain in Initial Cerebral Arteriosclerosis.*
4. Rehm, O. *Results and Prospects of Cytologic Examination of the Cerebrospinal Fluid.*
5. *Moro, E. *Carrot Soup in Nutritive Disturbances of Infants.*
6. Hamburger, F., and Monti, R. *Antitoxin Resorption from the Rectum.*
7. v. Franqué, O. *Operation for Recurrent Carcinoma of the Uterus.*
8. Engeland, R. *The Diazo-Reaction in the Normal Urine.*
9. Siegmund, A. *Gastric Disturbances in Masturbators.*
10. Endus. *An Angioma in the Pontine Region.*
11. Müller. *A Rare Complication following Submucous Resection of the Nosal Septum.*
12. Saalfeld, E. *Obituary of Oscar Liebreich.*

1. Posselt has studied acquired sclerosis and narrowing of the pulmonary artery and believes that in many cases the condition can be diagnosed with considerable certainty. It is most usually associated with mitral stenosis. The physical signs are remarkable right-sided enlargement of the heart, with a dullness and tenderness on percussion to the left of the upper part of the sternum. Often the presystolic murmur may be heard toward or over the pulmonic valve. Clinically the cyanosis is a remarkable and early symptom, and is associated with absent or slight dyspnea or other symptoms of broken compensation. Attacks of pain in the upper precordia, called by the author "angina hypercyanotica," are often noticed. In spite of the cyanosis, clubbed fingers are absent. Considerable bleeding from the lungs is often noted, without suspicion of infarct. The condition is much more rare when primary, or associated with aortic disease. The latter combination may be suspected in cases of aortic insufficiency, without broken compensation, but with cyanosis.

5. Moro observed that newborn guinea pigs, fed on cows' milk, immediately set up an acute condition suggesting an intoxication; when returned to the mother and suckled normally, the condition soon cleared up. Also if the young pigs were fed on a vegetable broth the intoxication symptoms soon disappeared. The author, basing his work on these observations, has tried specially prepared carrot broth on infants suffering from acute or chronic disturbances of nutrition. In the acute cases, in from one to three days the symptoms disappeared. In the chronic cases the recovery was marked, but somewhat slower. Little research has yet been possible on the metabolism of these cases, but it seems probable from clinical observations to say that the benefit is through water retention caused by the diet of carrots in children who are losing too much water. It is undoubted that in such cases the carrot soup is of great benefit. The author thinks that the action is probably by influencing the intestinal flora. [R. D.]

No. 32. Aug. 11, 1908.

1. Anton and v. Bramann. *Brain Puncture in Hydrocephalus, Tumors and Epilepsy.*
2. Waldvogel. *Present Methods of Testing the Function of the Heart.*
3. *Fraenkel, C. *Investigations of the Etiology of Pertussis.*
4. *Zieler, K. *Toxic Tuberculous Lesions of the Skin.*
5. Wirths, M. *Much's Granular Virus of Tuberculosis.*
6. Jochmann and Töpfer. *The Specificity of the Method of Fixation of the Complement in Syphilis.*
7. Oppenheimer, K. *The Treatment of Scarlet Fever in Children.*
8. Goetz, M. *The Treatment of Summer Diarrhea in Children.*
9. Hackenbruch. *The Radical Cure of Inguinal Herniae: Fascial Sutures.*
10. Mohr, H. *Observations on the Treatment of Hydrocele.*
11. Haeberlin, C. *The Technic of Extracting Needles.*
12. Sabrazès, J., and Lafon, C. *Beginning of the Ophthalmo-Cytoreaction following Use of Tuberculin; Nature of the Exudate.*
13. Dönitz. *Use of Gum as an Addition to the Anesthetic in Spinal Anesthesia.*
14. Bräutigam. *The Question of Sanatorium Treatment and the Indications for the Same.*
15. Degle. *The Prophylaxis of Measles.*
16. Dessauer, F. *A New Use for the X-Rays.*
17. Fischer, A. *Dr. Karl Singer. Obituary.*

3. In 1907 Bordet and Gengou found a bacillus which was constant in whooping cough and could be recovered easily from the sputum by using media smeared with or composed in part of human blood. Fraenkel has been able to isolate a similar bacillus from the sputum of pertussis patients during the early days of the disease. On media smeared with human blood, its growth is fairly profuse; small yellow or yellowish-brown colonies are characteristic. The colonies are much more hardy and more marked than those of the influenza bacillus with which it has been confused. Morphologically the bacillus presents a constant form and stains more deeply than the organism of influenza. It is Gram negative. Inoculation in the respiratory tract of apes brought on after five or six days a characteristic picture of whooping cough, which lasted from eight to ten days. Fraenkel considers this organism as the etiologic agent of pertussis.

4. Using dialysed or most carefully centrifuged and filtered extracts of tubercle bacilli, Zieler has induced by injection skin lesions which histologically were typical of tuberculosis. Therefore he concludes that true tuberculous lesions may be caused by certain substances contained in the bacilli, without the presence of the organisms themselves. [R. D.]

Berliner Klinische Wochenschrift. No. 31.

Aug. 3, 1908.

1. v. Schmieden. *The Plastic Repair of Traumatic Defects of the Auricle.*
2. Reicher, K. *Relations between the Adrenals and the Kidneys.* (Preliminary communication.)
3. Bernhardt, M. *Further Communications on the Occupation Accidents of Telephone Operators.* (Continued article.)
4. Strauss. *Proctitis Sphincterica.*
5. Arndt, G., and Wagner, A. *Experimental Observations on Fulguration of Vital Organs.*
6. *Posner, C. *The Applicability of Dark Field Illumination in Clinical Microscopy.*
7. Dietrich, A. *The Significance of Dark Field Illumination in Blood Examinations.*
8. Ehrmann, R., and Ledner, R. *The Action of Hydrochloric Acid on the Ferment Secretion of the Stomach and the Pancreas.*
9. Hess, L. *Method for Determining the Neutral Sulphur in the Urine.*
10. Arnheim, G. *The Present Status of the Whooping Cough Question.*
11. Krause, M., and Klug. *Relations between Immunity and Ferment Action.*
12. Wolff-Eisner, A. *Experiments with Various Derivatives of the Tubercle Bacillus.* (Concluded.)

6. Posner has used the dark field illumination, with ordinary magnifications, in the examinations of blood and urinary sediment. The former is not particularly satisfactory, but the latter shows great advantage. Particularly valuable is it in the examination of small concretions, the mineral and organic matters being very sharply differentiated. In searching for casts this method is of great value, as these bodies show in a very striking manner. The author gives several very interesting reproductions of the appearances of urinary sediments with the dark field illumination. [R. D.]

No. 32. Aug. 10, 1908.

1. *Martens, M., and Seiffer, W. *The Pathology of Cerebellar Tumors. Multiple Ependymal Glioma.*
2. Niessl v. Mayendorf, E. *The Localization of Motor Aphasia.*
3. Blumreich, L. *Suprapubic Cesarian Section.*
4. Meyer, K. *Is the Schütz Law of Pepsin Digestion Invalid?*
5. *Adler, M., and Milchner, R. *Examinations of Fecal Fat in a Case of Pancreatic Diabetes and Its Modification by Means of Pancreon.*
6. Hoehne, F. *The Employment of Urine for the Wassermann Syphilis Reaction.*
7. Stern, M. *The Technic of the Serodiagnosis of Syphilis.*
8. Chajès, B. *Microsporon Infections of the Scalp.*
9. Galli, G. *A Unique Dyspnea of Gastric Origin.*
10. Bernhardt, M. *Further Communications on the Occupation Accidents of Telephone Operators.* (Concluded.)

1. Martens and Seiffer report the case of a boy of twelve who, some weeks after a head injury, developed headache, vomiting and occasional double vision, slight dizziness and a little exophthalmos. The objective symptoms were tenderness on percussion over the occiput, with tenderness of the left mastoid, slight left-sided facial paresis, choked disk in both sides, slight nystagmus, increased knee jerks on the left, slight staggering gait and slight Romberg. The diagnosis of cerebellar tumor was made and operation performed. After the preliminary operation the boy died. Autopsy showed an ependymal glioma filling the fourth ventricle. In the third ventricle were numerous smaller growths of the same character. The tumor in the fourth ventricle had infiltrated the cerebellar tissue. The diagnosis of this rare condition is almost impossible during life.

5. Adler and Milchner studied the amount of fats in the stools of a patient with pancreatic diabetes. Their figures agree with most other investigators. The administration of pancreon increased considerably the amount of fat in the stools, instead of decreasing it. The fatty acids under pancreon were much increased, the soaps not at all. [R. D.]

Archiv für Klinische Chirurgie.

Band 85. Heft 2.

1. *Liek, E. *The Methods of Investigation of Renal Function.*
2. *Pels-Leusden, F. *The So-Called Congenital Defect of the Abdominal Muscles.*
3. Petrivalsky, J. *The Treatment of Phimosis.*
4. *Bardescu, N. *The Inguinal Operation for Femoral Hernia.*
5. Bircher, E. *Injuries of the Skull by Weapons used in the Middle Ages.*
6. Bockenheimer, Ph. *Diffuse Hyperostosis of the Bones of the Cranium and Face.* (*Leontiasis Ossea.*)
7. Clairmont, P. *The Treatment of Racemose Arterial Angioma.*
8. *Perret, Ch. *The End Results on Tuberculosis of the Hip.*

1. Liek calls attention to the value of the various tests of renal function in all cases in which a nephrectomy is contemplated. The phloridzin test, indigo-carmin, and the examination of the separate urines, both chemically, microscopically and by cryoscopy, all furnish valuable evidence when combined. In all cases the values are relative, not absolute, and it must be borne in mind that none of these tests is perfect. In 41 cases of nephrectomy there was but 1 death from insufficiency of the other kidney, and that was in a case in which it was impossible to catheterize the ureters because of a markedly contracted tubercular bladder. Of 9 nephrotomies and 2 pyelotomies there was also 1 death, due to secondary hemorrhage after extirpation of stone.

2. Pels-Leusden maintains that a complete, congenital defect of the straight, oblique and transverse abdominal muscles has never been observed. The real condition is a hypoplasia of the contractile substance of these muscles, their connective tissue constituents being present in normal amount. The cause of this hypoplasia is not known. The frequently described changes in the genito-urinary system are the result of this faulty development of the abdominal wall, not its cause. Even in fetal life the abdominal muscles and abdominal pressure play a definite rôle in retaining the normal position of the abdominal organs, as well as in furthering the descent of the testicle.

4. Bardescu describes in detail his method of operation on a femoral hernia by the inguinal route. After opening the abdominal cavity, and ligature of the sac, the femoral ring is closed by a suture surrounding it and uniting the ligament of Cooper to Poupart's ligament. The inguinal canal is then closed as in the ordinary radical cure of hernia. None of the cases so operated has worn a truss or support afterwards, and in no case has there been a recurrence.

8. From an examination of the end results in 230 cases of tubercular hip disease, Perret draws the following conclusions: Conservative treatment should be employed in those cases in which the exact site of the tubercular focus can be determined either by clinical means or by the x-ray. This should be continued until the affection has either healed or the site involved has become evident by further development; it should be employed only in such cases as seem to be mild and favorable. In severe cases, with open suppuration and threatening complications, arthrotomy and exploration of the joint should be done. If there is no hope of spontaneous healing, all diseased parts should be thoroughly removed. Thus a subtrochanteric resection is often avoided. In those cases in which the clinical examination, together with x-rays succeeds in accurately locating the tubercular area, an aseptic sequestrotomy, or curetting, promises the best functional result. [W. C. Q.]

RECORD OF MORTALITY

For the Week ending Saturday, Sept. 5, 1908.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	8	5
Chicago	—	—	Waltham	4	2
Philadelphia	392	123	Pittsfield	5	2
St. Louis	—	—	Gloucester	8	2
Baltimore	179	66	Brookline	2	—
Cleveland	—	—	North Adams	3	—
Buffalo	—	—	Chicopee	8	5
Pittsburg	—	—	Northampton	8	3
Cincinnati	—	—	Medford	4	—
Milwaukee	—	—	Beverly	6	1
Washington	—	—	Leominster	3	1
Providence	—	—	Hyde Park	5	1
Boston	228	110	Melrose	4	0
Worcester	31	7	Newburyport	—	—
Fall River	36	21	Woburn	4	1
Cambridge	28	8	Westfield	6	4
Lowell	38	20	Marlboro	2	2
Lynn	20	6	Revere	5	—
New Bedford	31	16	Attleboro	1	0
Springfield	21	9	Peabody	—	—
Lawrence	17	10	Adams	5	4
Somerville	19	3	Clinton	3	0
Brockton	16	8	Gardner	3	2
Holyoke	10	6	Milford	—	—
Malden	10	5	Watertown	2	1
Chelsea	9	4	Plymouth	—	—
Newton	8	3	Weymouth	2	0
Salem	7	1	Framingham	2	0
Haverhill	14	4	Southbridge	4	2
Fitchburg	—	—	Wakefield	—	—
Everett	6	4	Webster	—	—
Taunton	10	5	Arlington	3	1

OFFICIAL LIST OF CHANGES OF STATION AND DUTIES OF COMMISSIONED AND OTHER OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDED SEPT. 2, 1908.

Banks, C. E., surgeon. Granted leave of absence for twenty days from Aug. 23, 1908.

Wasdin, Eugene, surgeon. Granted extension of leave of absence for fifteen days from Sept. 1, 1908.

Cobb, J. O., surgeon. Granted leave of absence for seven days from Aug. 30, 1908.

Lumsden, L. L., passed assistant surgeon. Detailed member of board for examination of candidates for promotion, vice Passed Assistant Surgeon A. M. Stimson, relieved.

Holt, John M., passed assistant surgeon. Detailed to represent the service at the meeting of the Washington State Medical Association at Walla Walla, Wash., Sept. 9-11, 1908.

Vogel, C. W., passed assistant surgeon. Granted leave of absence for one month from Aug. 19, 1908.

Glover, M. W., passed assistant surgeon. Detailed to represent the service at the meeting of the Washington State Medical Association at Walla Walla, Wash., Sept. 9-11, 1908.

Bahrenburg, L. P. H., passed assistant surgeon. Granted leave of absence for one month from Sept. 12, 1908.

Stiles, C. W., chief division hygienic laboratory. Granted leave of absence for nine days from Sept. 10, 1908.

Dynan, N. J., acting assistant surgeon. Granted leave of absence for one month from Sept. 1. 1908.

Delgado, J. M., acting assistant surgeon. Granted leave of absence for twenty-nine days from Aug. 22, 1908.

Falk, C. C., acting assistant surgeon. Granted leave of absence for five days from Aug. 22, 1908.

Frissell, C. M., acting assistant surgeon. Granted leave for ten days from Aug. 20, 1908, and excused without pay for eight days from Aug. 30, 1908.

Goldsborough, B. W., acting assistant surgeon. Granted leave of absence for one day, Aug. 26, 1908, under paragraph 191, Service Regulations.

Mason, W. C., acting assistant surgeon. Granted leave of absence for seven days from Sepr. 13, 1908, under paragraph 191, Service Regulations.

Onuf, B., acting assistant surgeon. Granted extension of leave of absence on account of sickness for three days from Aug. 3, 1908.

Riemer, H. B. C., acting assistant surgeon. Granted leave of absence for fourteen days from Aug. 31, 1908.

Schwartz, Louis, acting assistant surgeon. Granted leave of absence for twenty-one days from Sept. 10, 1908.

Smith, F. E., acting assistant surgeon. Granted leave of absence for one month from Sept. 18, 1908.

Simonson, G. T., acting assistant surgeon. Granted leave of absence for two days from Sept. 1, 1908, under paragraph 191, Service Regulations.

Terry, M. C., acting assistant surgeon. Granted leave of absence for one month from Aug. 20, 1908.

Wilson, J. G., acting assistant surgeon. Granted leave of absence for ten days from Aug. 21, 1908.

Wilson, Richard, acting assistant surgeon. Granted leave of absence for one month from Sept. 14, 1908, and excused without pay for fifteen days.

Walker, T. D., acting assistant surgeon. Granted leave of absence for sixteen days from Aug. 20, 1908, and excused without pay from expiration of leave until Oct. 10, 1908.

Richardson, S. W., pharmacist. Granted leave of absence for seven days from Sept. 13, 1908, under paragraph 210, Service Regulations.

BOARD CONVENED.

Board of medical officers convened to meet at the Bureau on Sept. 14, 1908, for the examination of candidates for admission to the service: Surgeon J. M. Gassaway, chairman; Passed Assistant Surgeon H. S. Mathewson, and Jos. Goldberger, recorder.

PROMOTIONS.

Assistant Surgeon Norman Roberts commissioned as passed assistant surgeon (recess), to rank as such from July 9, 1908.

Assistant Surgeon G. L. Collins commissioned as passed assistant surgeon (recess), to rank as such from July 9, 1908.

Assistant Surgeon Harvey G. Ebert commissioned as passed assistant surgeon (recess), to rank as such from July 9, 1908.

Assistant Surgeon Herbert M. Manning commissioned as passed assistant surgeon (recess), to rank as such from July 9, 1908.

Assistant Surgeon Frederick C. Smith commissioned as passed assistant surgeon (recess), to rank as such from July 9, 1908.

Assistant surgeon T. W. Salmon commissioned as passed assistant surgeon (recess), to rank as such from July 9, 1908.

Assistant surgeon Ernest A. Sweet commissioned as passed assistant surgeon (recess), to rank as such from July 28, 1908.

RECENT DEATHS.

Dr. Staats Van Dusen Clark, of New Brunswick, N. J., one of the prominent physicians of the state, died on Sept. 7, from tabes dorsalis. He was sixty years of age, and was graduated from the College of Physicians and Surgeons, New York, in 1870. He served as city physician for seven years, and was also formerly a member of the Board of Freeholders. At the time of his death he was attending physician to the John Wells Memorial Hospital.

Frank A. Davidson, Ph.G., died suddenly of apoplexy at his home in Roxbury on Friday, Aug. 28, at the age of fifty-five years. Mr. Davidson was born in Lawrence, Mass., July 12, 1853, and was graduated from the Massachusetts College of Pharmacy in 1874. He became president and treasurer of the Theodore Metcalf Company in 1894, at the time of Mr. Metcalf's death.

Charles Harrington, M.D., M.M.S.S., of Jamaica Plain, died in Lynton, England, Sept. 11, 1908, aged fifty-two years.

Anna Mary Wilkin, M.D., M.M.S.S., died in Framingham, Sept. 11, 1908.

Herman Joseph Smith, M.D., M.M.S.S., died in Lowell, Sept. 13, 1908, aged seventy-one years. Dr. Smith had lived in Lowell since 1872, and was a member of the Middlesex North Medical Society. For eight years he was superintendent of the Lowell Hospital, and he also served as city physician and a member of the school committee. He received his medical education at the Dartmouth and Harvard Medical schools, and later served three years as a surgeon in the United States Army. He also held the position of membership in the Board of United States Examining Surgeons on pension claims in his district.

Original Articles.

THE HOME TREATMENT OF TUBERCULOSIS.*

BY ARTHUR K. STONE, M.D., BOSTON.

The crusade against tuberculosis has reached such a point that the public seems to be aroused. In a general way they are more enlightened upon the subject than are the mass of the physicians. The people have come to fear the disease and this fear affects them in several different ways. (1) They are more liable to look after coughs and colds and go to the doctor for examination earlier than has been their wont before; therefore it behooves us of the profession to be able to honestly answer the question that they put to us, "Have we tuberculosis?" We must learn to make a diagnosis early, and if in doubt, as we shall often be, not afraid to say so but to explain to them why they must come and be watched. (2) The public has come to fear the persons who have the disease, a blind unreasoning fear in many cases, but a fear which, for the time being, is working harm to those who are afflicted with tuberculosis. Homes are closed to them, work is denied them. Only the other day when a young physician had obtained an ideal position in the country for his tuberculous brother, by chance the man with whom the patient was to work heard a lecture by an enthusiastic member of this society and immediately the contract was canceled and the young man came to me almost in despair to inquire what he should do for his brother. All this is right and at the same time it is dead wrong.

It is right that the public should demand efficient protection. It is wrong that they should demand absolute immunity from danger. That is not to be found anywhere in this world, and life would be stale, flat and unprofitable if it were absolutely free from dangers and vicissitudes.

Thus we see that the first fear should work for the good of the patient. The disease should be found early and in the incipient stage when there is hope of cure. Our duty is to be able to recognize the early stage and then to give wise advice suited to the particular case.

This is often particularly hard to do, and it involves a thorough knowledge of all the methods in use to combat the disease and a selection of the most appropriate ones for the person before you.

When all has been said as to ways and means by which the scourge of tuberculosis may be stamped out, there will remain this important fact, that the brunt of the fight will have to be carried on in the *home*, and the work will have to be done for individuals and by the practitioners of medicine, or if they will not do it properly, by specialists whom the people will demand. In populous centers where there is overcrowding and poverty, the work will have to be carried on in a wholesale manner, but still it will have to be done in the home and for the individual.

The hospital and sanatorium, the day-camp and selected class, will all be aids to the solution of what will be the best method of treatment of the individual case, but they will only be helps and will not touch the great numbers who will be cared for during all or the greater portion of their illness at their own homes.

The disease must be discovered early by the general practitioner. That is a home measure. You and I must learn to make early diagnosis. Careful, thorough work is required and it will take time and bother, but it will well repay us for our efforts, — possibly not in cash, but in the consciousness of work well done,—and we must not be discouraged at mistakes; we shall all make them, but we must make fewer and fewer of them.

Have we found an incipient case? The question arises, What shall be done? Here it is that the general practitioner, living in the midst of his own community and knowing the surroundings of his clientèle and the family resources, is able to prescribe for his patient without the intervention of the nurse or social visitor, indispensable as she is in the larger centers. In many cases it will be well to make a start by using a sanatorium or a neighboring camp to get the patient fully in touch with what is required to carry out the simple but difficult line of treatment for tuberculosis. The methods have been described so many times and with such wearisome reiteration that we are apt to skip all details of treatment when they appear in the journals. We feel that we know it all. But I have seen physicians even, when told to rest and be quiet, spend the greater portion of their time walking "to get their legs strong." And if a doctor will do this in an acute stage of the disease, what can be expected of a layman who has derived his general information from the Sunday edition of some metropolitan journal and tells the doctor that he knows all about the details of the treatment?

Almost every incipient case would be benefited by a sojourn at a sanatorium. The hope that is engendered by taking the cure tends to steady the mind much disturbed by the discovery that they were afflicted by the White Plague. The fact that they belong to a great army of sufferers, all of whom are expecting to get well, is a great mental help. They involuntarily fall in step and do their best to become one of the "arrests."

But even arrested cases must return home and then should follow most careful supervision or there will be relapse and failure. The difficult *via media* between a hypochondriacal and a reckless state of mind on the part of the patient must be maintained. Encouragement or repression are to be judiciously but firmly exhibited.

The true condition of the patient must be found and his ability to labor and do things must be accurately estimated. It is not enough to say, get "light out of door work." Stop a moment and consider, is there such a thing? Certainly not in farming; there the work is hard and the hours of work are necessarily long throughout the desirable portions of the year. Most people have to do what they can do, and while chickens, carriage driving, greenhouses, bossing and time-keeping and chores all offer an aid to a few, they are not by any means ideal occupations.

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* Read before The Massachusetts Medical Society, June 9, 1908.

Only when one has capital enough to be master, with full permission to go and come as he pleases, guided only by the dictates of his own feelings, are conditions at all easy. The majority of persons will find that they have to face an eight or nine-hour job. Even municipal employment, should one be of the favored party, is getting to demand steady application, and the easy jobs are in great demand by the perfectly able-bodied politicians.

The majority of people will have to do their regular occupations. And they must be taught to do them so as to subserve their energies and to come through with enough vitality to be able to recuperate in the fourteen or fifteen hours they may call their own.

Ambitions for the most part must be put away. The patient will have to be content with what he can do and the wage he can earn, even if that is only bare existence. But existence with comfort is a great deal for this world.

But for one whom you are able to treat as you would desire, by sending for a time at least to a sanatorium for a course of schooling, there will be many who, for various reasons, will elect to stay at home, be treated in their own homes. Be wise! listen to the whole story; do not insist that the patient shall go away, consider the outlay, the homesickness, the unreasoning desire, if you will, that the patient expresses to live at home, to live in Massachusetts or Boston, and decide with wisdom whether it is best to break up families and incur debts. Remember that a contented mind will have as much to do in affecting an arrest of the disease as a proper climate or ideal surroundings, and that the mental unrest and discontent may entirely undo the supposed advantages of an ideal situation. Above all do not send patients away to get rid of them. If the patient finally decides to remain at home, all the various conditions having been considered, how shall that person then be treated? Have him understand that he must have your advice about the ordinary details of life and that for a long time he must look to you constantly for counsel and help; that it is the little things in starting that give the good results; that he must come to you for all his doubts and perplexities and in turn you must be able to give him a return for his money and be full of really good, suggestive advice.

Should you have several patients of about the same stage of the disease, it may be advantageous to form them into a "class," a modification of the system of treatment which has been so successfully developed by Dr. Pratt and others here in Boston. The inspiration of numbers is a great thing. The mutual meeting and discussion of the perplexities, of obtaining the maximum of fresh air, questions of diet and dress, beds and bedding, all can be discussed to great advantage in a group, and the physician will gain knowledge as well as the patients from the contact of a group of persons striving after the same ends. Even when the class idea is impracticable, the diary of daily events will be found of use. By means of this the patients will report accurately the amount of time spent in the open air or in sleep, the amount of food taken, the condition of the bowels, the condition of the cough, etc. In certain selected cases they may be even trusted to take their own pulse and temperature. But in all cases the things to be recorded must be chosen with discretion by the physician in charge.

To those who live in communities where there is a local hospital and where there are a considerable number of persons with tuberculosis to be cared for, it will be found a help to the home care to have an out-patient service, or, as it is often called, a day camp, established in the yard of the hospital. The House of the Good Samaritan on Francis Street, near the Harvard Medical School, was the pioneer in this aid to home treatment. The camp has been in successful operation for over two years. In Providence this scheme is to be adapted to the local conditions and carried out on the grounds of the Rhode Island General Hospital. Cambridge and other communities are intending to adopt the plan in the near future.

You may have to convert board of trustees and you will find opposition in the shape of obstinate, opinionated surgeons, but it can be done. And it will give you the aid of the class system; the feeling on the part of the patient that something definite is being done in addition to the daily encouragement of the visiting physician and nurses; all of which give great impetus to the enthusiasm which is necessary to carry one through the discouragements of this most dreary disease. Indeed, I sometimes think that the poorer people who are treated in groups have a better chance than those who are so well off that they can enjoy the depressing isolation of their own homes. That is why I urge you to form classes and camps for the treatment of your private patients who are going to remain at home or going to return home after their brief term of sanatorium schooling, but still needing rest treatment.

You must never get discouraged, but cultivate the enthusiastic optimism of Chas. L. Minor, of Asheville, or J. H. Pratt. Their success is not so much due to their methods as to their own intense personality thrown into their methods that gives them their results. The ordinary physician can usually have more of this enthusiasm before a group of people than before an individual.

Next, the physician must have an intimate knowledge of the home life in its details and try to regulate the conditions. It will not be enough to says, Keep out of doors. I have known a patient who was told that he must stay out of doors waste valuable strength in walking miles and miles. But if you allow them to walk a half a mile, see to it that they do that and no more; that if they wish to add another quarter of a mile they shall call upon you for permission. Regulate the details of the rest and work as far as you can.

Often you will be unable to get at your patient so that you will not be in touch with the real home conditions. It is here that the office or district nurse or the "friendly visitor" will all come in to help you in your work. Those of us who have to do with patients in the bulk, so to speak, in the cities, find that the wise woman is invaluable in getting detail information, in telling you what is essentially wrong in the household and what things are going to make for the recovery of the patients.

The nurse can often take a half hour or an hour or even more to find out small but important details, a time the busy physician cannot spend.

The diet must also be regulated. In many instances too much importance is put upon progressive gains in weight. It is not desirable to fatten patients, but it is necessary to get them, if possible, at or near their normal weight and keep them there. An excess of fat is not undesirable, for it gives a margin of safety, as it were, in cases of temporary depression. It is, in a way, a measure of physical well-being as a bank account is a measure of prosperity.

There are times when one has to work hard to invent things to tempt the appetite. But the ordinary simple food, eliminating such articles of diet as may be found to be undesirable and substituting those that are more wholesome, and adding to this regular home diet from one to two quarts of milk, will usually give the necessary excess of feeding. The experiences of thousands of persons have proved that there are very few indeed who cannot take and digest an extra quart of milk each day without any discomfort. Indeed, it is surprising to see the amount of milk the average person living in the fresh air will assimilate without the slightest effect on the appetite. Milk will always be our main reliance, with its cheapness and its food content, 600 calories to the quart, together with its life-saving *diuresis*.

Careful regulation of the bowels has to be adopted in certain instances to enable the patient to consume this food, but if that is attended to there is practically no difficulty. Olive oil, emulsions, cream, eggs and honey can be used judiciously as a means of getting in extra calories in as small bulk as possible.

Prof. Irving Fisher's tables of the caloric value of foods I have found of use in looking over dietaries of patients to see whether or no they were getting sufficient nourishment.

Special dietaries are to my mind useless, except as to the most general outlines. Every one likes different things to eat. It was a policeman, I believe, who came to the matron of a private hospital in a rage because they were feeding his wife on "sweetbreads" and he was only pacified when he was assured that it should not happen again and there should be plenty of corned beef on the menu during the remainder of the patient's stay in the hospital.

The wise physician will also arrange the sleeping hours, or, at least, the hours to be spent in bed. When it is possible I think some out-of-door arrangement for sleeping is desirable. Dr. Millet has shown how this can be applied in the houses ordinarily found in the mill towns. Many of the city tenements have fine balconies at the back. Where these have the proper exposure they can be made, at a very small cost, most desirable and private for sleeping apartments. Flat roofs can be utilized to support tents or shacks, and small sleeping balconies can be put outside windows at small expense. Dr. Pratt has slept on the roof of his house in the Back Bay for several years in winter and in summer, in rain and in moonlight.

The person sleeping out of doors must be suitably dressed and the body must be protected from the cold from below as well as above. The physician must be able to give advice as to keeping warm so that it shall be successful on the first attempts or the patient will become discouraged.

There is much to be said in favor of out-of-doors sleeping. First and foremost it is out-of-doors and there is all the fresh air that there is going; and second, when the arrangements are once made, it is less disturbing to the family than to have the person sleeping in doors and trying to get approximately the same amount of air.

Physicians and nurses frequently advise the largest and best room in the house, which results to the great discomfort of the whole family, who are thus often banished from their usual sitting-room. Again, the house is often thoroughly chilled by the cold air in one room, and in many cases it is a decided additional expense to try to heat up the house when the temperature in one room is allowed to get down near or below the freezing point, sometimes approaching zero. In cold weather the air of a room has a chill and much more disagreeable feeling than a similar or even lower temperature out-of-doors. With the bed out-of-doors it is easy to have a warm comfortable dressing room, a most essential thing for the comfort of the patient.

One of the modern palaces in the suburbs of Boston has been built so that there are loggias outside the rooms occupied by members of the family. These are separated from the rooms by tight-fitting French windows through which the beds can be pushed at night and then closed again, leaving the room warm and comfortable on the following morning. One of the Brookline physicians, in his house recently built, has a most convenient arrangement devised for this luxury of fresh-air sleeping. Thus we see that the architects are beginning to arrange and plan for open-air sleeping, and it is to be hoped that this fashion will grow.

Theoretically, I believe that one of the many forms of window tents can be employed to great advantage in many homes when for one reason or another the out-of-doors bed is an impossibility.

Even in out-of-doors sleeping there is no reason to dogmatize and say that it must be done. At this time of year it is easy to try the experiment under most favorable conditions, though there will be found times in June and July, when the air is charged with the pollen of the grasses, that many patients will have to betake themselves into the house in order to prevent the persistent cough caused by the irritation of the air passages by these minute particles, even if there is no other ordinary manifestation of hay fever.

Rules for bathing and the water temperature of the bath must all be regulated by the physician according to the previous habits and present strength of the patient. No rule can be given which will fit every case.

Personal cleanness must, however, be insisted upon. The patient must understand that his sputum is dangerous; that it will fly in the act of coughing and may, nay will, contaminate the air and surrounding objects.

The patient's hands are bound to become contaminated, either from the sputum on the paper napkin or pieces of cloth held before the mouth, or from the spray escaping in the hand. Hence there must be frequent washings of the hands. And if there is much cough and sputum with bacilli present, either the patient should refrain from having anything whatsoever to do with the food of the family or should use most constant care, washing and rewashing the hands.

It is better that all spoons, knives and forks, cups and glasses which are in daily use by the consumptive should be kept separate from those of the others and should always be washed in boiling water. Indeed, boiling water should be a very very frequent factor in the housekeeping of a family where there is tuberculosis.

It is most discouraging to find after you have given attention to almost all details to find some day, accidentally, that something is being done which simply undoes all the precautions that are being carefully carried out. Dr. Knopf tells the story of a tuberculous woman who, when preparing her baby's milk, washed her hands, boiled everything in sight, made ready to feed the child, but first tasted the food to see that it was all right and then fed the baby with the same spoon which she had just put into her own tuberculous mouth. Therefore, it is well to see for yourself what the patient does from time to time, or to send your nurse to see what are the patient's habits, in the course of the half-hour and more interview when nothing is said about the disease or contagion.

Indeed, one of the great things that the physician must keep in view is that the protection of the other members of the family rests upon his shoulders and it is just as important as the personal care of the patient.

If the disease progresses and begins to run an unfavorable course there will come a time when the family will be all worn out with nursing and it may be part of the home treatment to secure for your patient care in a hospital. A hospital for advanced cases is of the greatest value to a community, giving the opportunity for the best care of the patient, and it also removes from the family the source of infection when it is at its height; when the patient is too weak to protect those about him and the friends are too tired with constant watching, nursing and anxiety to protect themselves.

The State of Massachusetts is to build three hospitals; Boston is building a hospital. Those of you who live where there are local hospitals should strive to have a wing or annex built that will take the advanced tuberculous patient. Provision for care of advanced cases is needed in every community. Do your best to obtain them, and preach their advantages in season and out of season, both to your patients and their friends, until you arouse a sentiment in favor of the advanced case going to a hospital. Remember the general practitioner should be the educator of the community.

To recapitulate this very imperfect and rambling paper, I have tried to say that in one way or another most cases of pulmonary tuberculosis have to be treated in their homes and consequently by the general practitioner. He must, therefore, learn to do his work well in all its bothersome details. Sanatoriums, hospitals and other public institutions are but incidents in the course of the treatment and are to be used by the physician as freely as he makes use of any other therapeutic measure.

The impetus and the sane development of the tuberculosis crusade and the thorough education of the people are in your hands as well as the care of their persons. Will you not make the most of your great opportunities?

DISCUSSION.

DR. I. J. CLARKE, of Haverhill: The home treatment of tuberculosis appeals to me as being the most important problem connected with the disease, and largely from these facts. First, 98% of all cases are treated at home. Secondly, less than 10% make a permanent change in climate. Thirdly, nearly every case treated at a sanatorium and which recovers, returns home sooner or later and is obliged to carry out in more or less detail the treatment for at least several years. The success of this treatment depends upon several important essentials.

The first would naturally be the confidence of your patient. By the larger majority of patients this treatment is looked upon with considerable distrust and derision; it is too simple, it does not embody the use of those old black, mysterious, powerful, bad-tasting medicines that human kind is so much accustomed to. We have not accomplished arrests or cures enough that stand as living monuments among the people to at once inspire confidence in this particular method.

The second essential is the masterful management on the part of the doctor. He must dominate the situation. Knowing that benefit is the matter of months, arrest of years and cure of many years, he will map out the course accordingly.

Study the mental conditions of your patient. Encourage the despondent, and with great patience instruct the ignorant. Make your directions clear and definite. It is necessary that you explain the nature of the disease to the patient. To give the impression that the course of the patient's illness is a slight affair will result in a misunderstanding as to the gravity of the disease, with a consequent neglect of rules.

Nothing will be gained by deceit; and frankness increases confidence, providing that after your unpleasant announcement to the patient you temper the situation of affairs by stating that he or she can be cured by following strictly the treatment as laid down. He must understand that his improvement and final recovery will depend largely upon his own conduct. The physician should have at his tongue's end numerous statistics of a very encouraging nature.

A most important factor is the training of the family. They too must adjust their life to the needs of the patient, must shield him from worries and cares, must encourage him in his hard struggle and should be made to fully realize the length of time required.

The third essential is persistence. This is a very important element from the standpoint of time. There is probably no disease so liable to relapse, and largely from lack of vigilance. No case of pulmonary tuberculosis can receive any permanent benefit in less than three months or a cure in less than six, and for one that has passed the most incipient stages from two to three years are necessary. This means a skillfully long and well-planned fight, and where undoubtedly most of our failures come, in what appear to be favorable cases, is from our lack of persistence and watchful care of the patient after the danger seems to have been passed. The false confidence the patient has, after being relieved of noticeable symptoms, often leads him to drift away from us and rest upon his own responsibilities, and when the time comes for us to relinquish the charge of our patient the danger of relapse should be most strongly impressed upon his mind even to the point of exaggeration.

The fourth essential is sunshine and fresh air. I am 'a firm believer in the balcony. The balcony possesses several advantages over the tent or other side affair, as follows. It is more roomy, secure and sightly. It opens directly out of the home, a warm room if you like, where the patient can take his cold sponge bath, dress or undress if desired. It can be made large enough to contain articles of furniture that give it a homelike appearance. The patient can be waited upon and cared for much easier. It is a better protection from hard rains and snow. It gives women a better protection from intrusion. It is more cheerful and enables patients to receive callers under homelike conditions. It gives better ventilation than some tents. It is desirable that these be made at least eight feet square, larger if possible, and built from the second story. A window of the house is used for entrance and exit, with a step on either side of the window. It should have a south or west exposure, or both. Most of our summer breezes come from the south or west, and those of winter from the north and east, from which we need protection. It should be securely built to resist high winds and of considerable weight. Ventilating spaces running all round should be provided at top and bottom where the roof and floor meet the sides.

Sliding windows are better than curtains as they give you light in stormy days and are much easier operated; they are also more durable. The windows should be fitted with small wheels upon the bottom so as to slide easily, and space enough allowed so that all the windows of each side can slide by each other; in this way all the space is left for air except that occupied by one window. Screens or screen cloth can be fitted outside of the windows; also awnings. The latter can be arranged by running the roof timbers well over the side and ends, which will give you a chance to tack on canvas for shade in the warmest days. This can be wisely left on during the summer months without interfering with the ingress or egress of air.

It is unnecessary to add that every comfort and convenience within the means of the patient, such as an electric light and bell, should be considered. This room is to be our patient's home for many months, perhaps years. One important advantage of a balcony is that it segregates our patient from other members of the household, — a very necessary thing to accomplish,— for we know how important it is to adapt every measure possible to prevent infection of others in the family. As to providing for the comfort of patients during the extreme cold weather: this can be readily done by their wearing some loose-fitting union suit that has a detachable head piece with an opening for the face only. This should cover the feet and come well down over the wrists. With this arrangement you will not require as many clothes, the weight of which patients complain of. During the most severe weather a carriage heater, which is by far the best way of supplying artificial heat, hot-water bags or other devices will have to be used. A few nights it is necessary to throw a crocheted shawl over the face to prevent freezing the nose and cheeks.

The expense of any good balcony of planed stock is about $40.

The fifth essential is rest. This is the hardest regulation to enforce. There comes a time, and it seems to me the most critical one in the whole history of the disease, when it requires the greatest amount of tact and diplomacy to control your patient, namely, after he has been free from fever for a week or two and is feeling much better in every way and has the strongest sort of desire to get up, and he will do so unless every resource is brought to bear to prevent him.

The sixth and not the least essential is nourishment. A large majority of favorable cases will take a good amount of food. Milk and eggs, with some variety of other nourishing drinks, will be our main stay for some time in the more serious cases. A small per cent of cases get where they cannot digest either milk or eggs. These generally do better to take small quantities of solid food, and if there is diarrhea withhold fluids largely.

It is necessary to insist upon regular feeding at least six times in twenty-four hours, and it is our duty to furnish a menu from which the patient can select. Forced nourishment to the limit of digestion is of the first importance. It is well to avoid sweets, fancies, much fruit or drinks except milk and water. The use of alcoholic drinks should be forbidden except in rare cases.

The expense of home treatment is less than at any sanatorium. There will be a certain per cent of patients that will do better away from home. Among these will be those that are not submissive and obedient; also those in families lacking system, interest or discipline, those that have no near relatives or a home, those whose income ceases when they stop work, but who can for a while at least have good food and rest, and those who for domestic and other reasons will take their chances at home. According to Osler there are various conditions that contra-indicate a change to a high altitude. For this class of patients the general condition is of great importance, and a constitution capable of some resistance and organs capable of increased nutritive and oxidizing work are necessary. Special conditions are all acute cases, those with nephritis, diabetes, pronounced emphysema, grave anemia, nervousness, rheumatism, severe gout, marked arteriosclerosis, cardiac dilatation, persistent tachycardia, pronounced aortic or mitral regurgitation, uncomplicated or complicated by pleural adhesions, and pericarditis; those with feeble circulation and great susceptibility to cold, tendency to fever with slight ailments, those with small lung capacity, organic disease of the brain and cord, those with cavities or tendency to hemoptysis and those fifty years of age.

Furnishing some means of light employment for those in need will make the patient more willing to wait until the arrest of the disease is more complete.

While no one has had sufficient number of cases to treat at home to write many articles from this standpoint, yet but from the degree of success obtained thus far it is safe to assert that a few years will stamp this method as the treatment for consumption in a large per cent of cases when in the hands of skilled and tactful physicians.

Dr. H. L. Chase, of Brookline: The hour is late, but I think there are about four things to keep in mind. One, the home treatment of patients of tuberculosis. In the case of well-to-do patients we should not consider any other treatment than the home treatment. There is no good reason for sending away well-to-do patients, but rather those of the poorer class, where they can get well in sanatoriums, but in 97% we cannot send those cases to a sanatorium, even if they are ever so incipient. We must take care of them at home. At home the patient, to stand the first chance to get well, must live out of doors, must have absolute rest until all the symptoms are quieted down, must have sufficient milk and eggs and sometimes fatty substances like olive oil. Also the moral and mental side has to be considered as well. It is difficult to get the patients to recognize the importance of out-of-door sleep. We advise them to sleep, where they have a chance, to sleep on the roof where there are no balconies. We must not forget the value of sleeping with the head out of the window. I have had two men sleeping that way all winter and they have benefited by it. We must not forget that patients aided by their town or city cannot any longer be pauperized. It is true in Boston the aid comes from the pauper department. They may be helped by the town. They are not pauperized. They are helped by the board of health, not by the pauper department. This subject has been well covered by Dr. Stone in his excellent paper. What are we to do with the arrested cases of tuberculosis and supply the proper work for them? Dr. Worcester is going to give us help about this.

Dr. J. B. Hawes, Jr., of Boston: I am very glad to hear what Dr. Stone has said about the importance of home treatment.

I wish to speak briefly on one or two points which he has brought up, which I think should be given more emphasis.

In every case the physician should make a point of examining not only the patient he is treating, but the other members of the family, especially the children. In this way many early cases of consumption will be discovered. One of the first things which I tell my patients who come to my tuberculosis classes at the Massachusetts General Hospital is that they must bring the other members of the family for an examination. After the importance of this is explained, there is no difficulty in arranging it.

I feel that my hospital patients are getting somewhat better treatment than I can give to my own private patients. This is because at the hospital I have a nurse or trained volunteer visitor who can go into the homes of the patients regularly and see that my instructions are carried out. This can rarely be done in private practice as scientifically as I could wish.

I do not believe that window tents offer a solution of the problem of getting patients in tenement districts of a large city fresh air at night. I have not found them satisfactory. The best and more elaborate kinds are far too expensive, and simple home arrangements such as can be made for $2 or $3 are not efficient. A bedroom with two windows, with the bed in the middle of the room rather than in a corner, is, in my opinion, better than a window tent. A bed on the roof or a balcony is the best of all.

The home record system started by Dr. Pratt is of great value. The use of a thermometer is a guide not only to the physician but to the patient as to whether he or she is doing too much. The objection so often raised that it makes the patient neurasthenic and introspective does not hold good in actual practice.

I believe that this home treatment by means of tuberculosis classes, helped out by day-camps wherever possible, is to be the most important factor in solving tuberculosis problems of small cities and towns in this state.

Dr. A. A. Cushing, of Brookline: That a day camp is a successful factor in the fight against tuberculosis is an established fact. My purpose in this paper is to present, in as concise a way as possible, the results of our two years' work at the day camp of the House of the Good Samaritan.

Bear in mind when comparing our work with that of others that we have not taken just incipient cases, but that we have had the advanced, the incipient and all the intermediary stages.

During the two years 129 patients have been or are under treatment. Our camp, which has been open winter and summer, being the first in Boston if not in the country to do so, is limited in numbers to 25 women or girls. At times like the present we have some patients that come but three days out of the week, thus giving us more on our record book than the required number. Just now we have 27.

We have a so-called probation period of two weeks. During this time we decide whether or not the patient means business, and we make a point of impressing upon the patient the great need of systematic earnestness in the fight. Her attendance and perseverance are tested at this time, giving us a fair index as to the outlook in her particular case. If she seems suitable we take her as a regular patient and expect of her daily attendance, except Sundays, from 9 A.M. until 5 P.M., faithfulness in carrying out instructions while at home nights and Sundays, and a willingness to attend camp if need be at least six months. Those that fail during this time to come up to the mark must be dropped, not alone for the lesson it brings to the patient, but for the good of the entire camp. An irregular or shiftless patient is a bad influence in any camp. We have had 12 cases that for this reason and others have had to be dropped during the first two weeks. These 12 added to the 27 in the camp at present make 39, which subtracted from the grand total gives us a total of 90 graduates.

These 90 graduates stayed, on a general average, four and one-half months in the camp. The extreme lengths of time varied from two weeks to seventeen months.

As regards gains in weight, 9 lb. is the general average, the extremes varying from a loss of 9 lb. to a gain of 37.

Every case treated has been tubercular with a single exception, and that was a case of chronic influenza. Our diagnoses are based upon physical signs, sputum examinations and, if these fail, in suspected cases on diagnostic tuberculin.

The cost of such a camp is no small item to be considered. The first year the cost was about 33 cents a day per patient. During the last year milk as well as other foodstuffs advanced in price, sending our cost of maintenance to 36 cents a patient per diem, making a general average of about 34 cents for the two years. The fact that we are connected with an already established hospital makes our living expenses much lower than they would be if we had to establish and run a place just for our camp.

What are our results as to patients?

Patients	discharged	against advice,	8,	about	8%
"	"	to Rutland,	2,	"	2%
"	"	unrelieved,	35,	"	38%
"	"	improved,	9,	"	10%
"	"	arrested,	36,	"	40%

Some of the 40% have returned to the ranks of breadwinners, while others work at home. All the graduates we try to keep track of. The older graduates report to us every month or six weeks, while the newer graduates report weekly, and all are carefully watched for relapse. So far but one has relapsed, as far as we know, and she is in camp now. Unless contra-indicated, all get tuberculin weekly, and the graduates, when they report, bare their arms for the little dose that immunizes.

The facts are there. They show that it is a struggle that pays, perhaps not in dollars, but in what is greater, human lives. The story is not all there, though. What is most important, to my mind, is the fact that 129 patients have been *educated* in the ways of caring for themselves and in the ways of protecting others. One hundred and twenty-nine patients have been shown the value of food, rest and fresh air in the battle of life. Some have profited, others have seen the opportunities and have allowed them to slip away without once realizing their value. All the patients have been shown how to carry on the treatment *at home*. The disturbing colds and bronchitis of winter and the depleting diarrhea of summer, with the discomfort of heat, have been battled with and the patient shown how to keep well. Our nurse has gone into the homes, and with patience shown the patient and the family how to make the most of what is at hand. Thus when a patient is "graduated," she goes, not into different surroundings, where she will have to solve the new living problems alone, but continues as she was started. A very important problem in the treatment is thus solved, namely, how to keep an arrested case cured.

True it is that we have not cured all, but lives that could not be saved have been lengthened, homes have been made cleaner and happier, and the path of life has been smoothed of many of its rough places.

THE NECESSITY OF PROVIDING EMPLOYMENT FOR TUBERCULOSIS PATIENTS.*

BY ALFRED WORCESTER, M.D., WALTHAM, MASS.

In India, in preventing the spread of leprosy, their custom is to take the one discovered to be afflicted with the disease into the temple, and there hold funeral services. It may be over a mother who is taken from her children. After the funeral services she is brought to the walls of the city and the sentence is pronounced upon her that if she shall ever enter the home of a non-leper, or if she shall allow even her children to enter the cave where she shall take up her residence, she shall be stoned to death. That fearful sentence is sometimes carried out even to this day.

The other day a young physician was about to send his brother who was supposed to be afflicted with tuberculosis to the Tewksbury Almshouse. He is unable to support his brother, and no employment could be found for the incipient consumptive. What is the difference between taking the woman to the walls of the city and sentencing her to be put to death if she enters the house of the non-leper or allows her children to enter her cave, and sending your brother to the Tewksbury Almshouse? What are we to do about it? A man who comes back from Rutland pronounced cured cannot again have his previous employment because of the rule of some corporations that they will not employ a man afflicted with tuberculosis. This custom is spreading. Every public meeting where the dangers of tuberculosis are explained results in pauperizing families by throwing out of employment incipient consumptives who would themselves be far better off if given suitable employment. What shall be done about it? It is our duty as physicians to prevent the spread of disease. And it is also our duty as physicians to relieve those who are afflicted by disease. This in many instances involves finding for them suitable employment. There is not only the economic necessity for this; there is also the therapeutic value for us to keep in mind.

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* Read before The Massachusetts Medical Society, June 9, 1908.

In some sanatoriums patients are given fake employments, such as drawing and painting and basketry, simply for the therapeutic advantage. It would be far wiser to teach patients useful trades by which afterwards they might earn their livings. I find that the Jewish Anti-tuberculosis Society, which has its hospital in Colorado for the relief of tuberculous patients, has carefully studied this problem. They report that it is impossible to get the tuberculous Jew to work at agriculture. That cannot be done because he is by nature a mechanic and tradesman and must have work in shops. In Germany, on the other hand, they find no trouble in outdoor work, and the German land colony seems to me to be nearer what we need here in America. They take the man out, give him a little patch of ground, and let him work half a day or even less, and they pay the man for what he does. I will not detain you longer, but I hope I shall obtain your hearty indorsement of the motion I now make that this general committee of The Massachusetts Medical Society shall take the forward step of asking for a commission, which shall include physicians and philanthropists and business men, to grapple with this big problem. If we are going to succeed in exterminating the disease something of this sort must be done. Otherwise our efforts will be wrecked on the economic blunder of forcing a large part of our population into unnecessary pauperism.

DISCUSSION.

Dr. A. C. Getchell, of Worcester: When I was asked to take part in this discussion I did not fully understand the scope of this question as it has been presented. I am in full agreement with the general proposition to provide some means to help and look out for arrested cases of tuberculosis.

But we should carefully consider what that means. When I first visited Colorado I was very much impressed with the number of physicians in active practice who had gone there because they had pulmonary tuberculosis. Able men all. Those were the ones who formerly attempted the cure,— men and women entirely able to take care of themselves when well, Here, however, we are attempting this cure with all classes, the competent and the incompetent, and it is evident that many must be helped in their efforts to earn a living. Any comprehensive plan to effect this will cost money. But it is worth it. It is evident that tuberculosis may be eradicated from civilized communities if the means plainly at hand are employed. Considering the unnecessary destruction of life from this cause, it is not only our plain duty, but good economy, to put those means into operation.

Any scheme for carrying out this plan should have most careful consideration, which may be given by our council, and I most heartily second Dr. Worcester's motion.

Dr. E. O. Otis, of Boston: I can add another case to those which have been cited by Dr. Worcester, and probably other gentlemen present could add others from their experience. I had in my clinic last winter, at the Boston Dispensary, a young man with somewhat advanced chronic tuberculosis, but in a fair general condition, and capable of doing a considerable amount of light work, as he proved by doing a day's work for me. He had obtained a position on an estate at the seashore and was performing his duties satisfactorily. One day his employer happened to see an application of his for a pension, — he had served in the Spanish War,— in which his disease, tuberculosis, was mentioned; he was immediately discharged, his employer remarking that he could not take the risk of having his family infected by him. He came to my clinic, and after trying in vain to obtain a place for him in the country, where he could support himself, a place was finally found for him in a consumptive home, where he leads a sort of aimless life. How much better it would have been for him if he could have been placed in the country where he could work to the extent of his ability. The Boston Tuberculosis Association is maturing a plan, in co-operation with the trustees and superintendant of the Rutland Sanatorium, whereby an investigative or social worker shall be stationed at the sanatorium, with the object of keeping in touch with the patients, after they leave the sanatorium, and, so far as possible, finding suitable employment for them, especially for such as could not return to their former employment and environment without jeopardizing their cure. In the Day Camp at Mattapan last year, Dr. Townsend found that out of the 204 patients treated, 134 had received previous treatment at other hospitals, tuberculosis classes or sanatoria, and 34 were discharged Rutland patients. Moreover, it was found that the breaking down of the cure occurred in a surprisingly short time after discharge from the sanatorium. It is fair to presume that in many cures this unfortunate result might have been averted if suitable employment could have been found for them. The problem is, then, to aid arrested cases, and those who, though not arrested, yet are capable of doing a certain amount of work without injury, to obtain suitable, self-supporting employment. The problem is an insistent one and difficult, on account of the fear of infection by would-be employers, and Dr.

Worcester's plea is very timely. In some of the English sanatoria a preparatory training is given the patients who are in the process of cure for sustained work after they leave the sanatorium. Such patients are given light work for a short time as first, and if no evil results follow, this work is increased in amount and duration until they are capable of doing a fair day's work; thus on their discharge they are in condition to enter at once upon some regular employment which requires sustained endeavor. This process of training obviates one objection so often urged by those who are willing to employ arrested cures, namely, that they want a man who is capable of doing a day's work, and not one who can do only light work for a short time.

If we are to obtain the full economic benefit of the money spent in arresting the cases at Rutland we must so far as possible train and harden for work the patients while completing the cure, we must supervise them after discharge, and finally aid them in obtaining proper employment under favorable hygienic conditions. I, therefore, heartily and earnestly endorse Dr. Worcester's resolutions.

Dr. C. E. Simpson, of Lowell: I have very little to say on the subject at present. I have always felt the danger which Dr. Worcester and others speak of, and in dealing with this work in the factories under my care, while trying to surround the patients so that they shall not be a menace to others working with them, I try to give the impression that we are considering their welfare first, and not to create any fear of them or make any additional hardship for the tuberculous cases or those that have a tendency in that direction.

I have found the fellow operatives and managers willing to help them financially, if they go to some institution for treatment, but have no example, as yet, of how they use them when they return for work.

There is only one place that I know of where I have met with the spirit that I wish to avoid, and which has been so strongly set forth by Dr. Worcester. This was in a little shop of about one hundred employees, having at the time of my visit 24 minors. These minors I am required to inspect. One of them I found had tuberculosis, 1, tubercular disease of a bone and 4 others had a bad family history. This is a much worse showing than is usual in my district, and I called the manager's attention to the condition as diplomatically as I could, that he would have to look out not to put special strain on these. He said he was not aware he had such a state of things and guessed he would have to "clean some of them out."

On the other hand, there is another phase to this question, and when you appoint a commission to find employment for the so-called "cured" it will be necessary to look sharply after them or some of them may make trouble for the project. To cite a case where much damage might be done; in investigating one of my communities, I found a grocer who had been discharged from Rutland as cured, but is still having considerable expectoration although free from bacilli. He is every day measuring out goods from the room in which he spends considerable of his time, and these goods are to go into the homes of the community. If he remains free from bacilli he may be no particular menace, but he should be closely watched or he may become a source of infection to a large number of homes.

While there may be a few that will need watching, there will be a large number that can be greatly benefited by such a commission. The only way we can reach this subject of tuberculosis is by being a friend to the sufferer. If we are not, and only use him as something undesirable for other people to work with or be near, his friends will protect him, no matter how strong you make your laws; and is not and should not the family physician be the friend of his patient, and could one blame him much if he "believes the case to be something else"?

Dr. W. T. Councilman, of Boston: It seems to me that in many instances there is, on the part of the laity, and also the profession, an unjustifiable fear of infection in tuberculosis. It is true the bacillus is the infectious agent and that the patient with tuberculosis discharges the bacilli often in great numbers. But how and under what conditions infection takes place is another matter. Infection does not take place in the simple manner which it does in diphtheria and the acute bacterial diseases. While we cannot let up in our efforts to destroy the discharged bacilli and to keep the well, and especially children, from the chance of their reception, it seems to me utterly unjustifiable to attempt to segregate all cases of tuberculosis irrespective of the nature and the situation of the lesions. There is much ground for the belief that infection, in most cases, takes place in early life and that the disease, as we see it in adults, is the result of the extension of a latent focus which was due to an early and unrecognized infection. If any one thinks of tuberculous infection as occurring simply because the seed and soil are present, he should go over carefully the statistics as to marital and prison tuberculosis.

Dr. I. J. Clarke, of Haverhill: I understand that when patients who have had tuberculosis try to go to work again they are not allowed to do so. I should like to know whether this is a custom here, or whether it is in other cities, to refuse the labor of tuberculosis patients. I think it is very important for us to be pretty clear on this point before asking the committee to appoint a commission. I think it is a great deal better to leave it in your hands [Dr. A. T. Cabot] without taking this to the council, by appointing some of this body and asking men also to take this up. I think this is very proper.

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Gift to Library. — Drs. Emanuel J. and William N. Senn have presented to the John Crerar Library, Chicago, more than 2,000 volumes from the library of the late Dr. Nicholas Senn, to be added to the Senn collection. — *Jour. Am. Med. Asso.*

SOME POINTS IN THE APPLIED ANATOMY OF THE TONSIL.*

BY HARRY A. BARNES, M.D., BOSTON,
Assistant in Laryngology, Harvard University.

The faucial tonsil is a collection of lymphoid tissue lying on the superior constrictor fascia and between the faucial pillars. It differs from other collections of the same tissue found in various parts of the alimentary tract throughout its extent only in its size, its compactness and in the arrangement of its lymph nodules about its crypts. There is no reason to believe that the function of the tonsil differs in any way from that of other similar lymphoid tissues. Therefore it may be removed *in toto* without appreciable loss to the economy.

In this paper I wish mainly to consider the two most important structures of the tonsil from the pathologic and operative standpoints, viz., the crypts and the capsule. I shall refer only casually to the lymphoid tissue, since its study should be undertaken with that of the other lymphoid tissues. This is beyond my purpose here.

THE CRYPTS.

The crypts are developed from solid epithelial buds which begin to make their appearance in the embryo at the fourth month. From this period through fetal life and during the first year of infancy new buds are being formed, which very soon are transformed into hollow tubes, or rather clefts, by a process of shrinkage and cornification of their central cells, which form a core and are expelled as such. The crypts thus formed vary in number from eight to eighteen. Their general direction is outward; those, however, which empty into the supra-tonsillar fossa extend downward and outward. From their openings on the faucial surface of the tonsil they extend deeply into its substance. They or may not be branched.

The lymphoid tissue is developed in the more superficial layers of the fibrous tissue (*tunica propria*) immediately surrounding the surface and cryptic epithelium. The deeper layers of the propria are pushed aside by this development and form, on the outer side of the tonsil, a well-marked fibrous investment, the capsule, from the inner surface of which a series of fibrous trabeculæ extend between the crypts, dividing the tonsil into lobes. The larger of these trabeculæ extend as far as the propria of the surface epithelium, with which they merge; others become gradually attenuated and are lost in the fine reticulum of the lymphoid tissue.

I shall speak of the capsule in greater detail later and wish now only to call attention to the fact that it forms, with its trabeculæ, an inverted replica of the epithelium with its cryptic prolongations; that the fibrous fingers on the one side are dovetailed, so to speak, with those of the epithelium on the other; and that the two are separated from each other at any given point only by the development of a single row of lymph follicles. It follows, therefore, that the blinds ends of the crypts lie in very close relation to the capsule. As far as my observations go, they are never in apposition, but are always separated by a very thin layer of lymphoid tissue, usually diffuse. Sometimes a germinal center is interposed. Ballanger states that the crypts always extend to the capsule. While I think this is histologically untrue, I am sure that his practical application of it is sound, viz., that to obliterate the crypts the tonsil must be removed in its entirety.

The caliber of the crypts varies at different depths. In a strictly normal tonsil I suppose the epithelial surfaces should lie in apposition throughout the whole course of the crypt. I have yet to examine such a tonsil. The nearest approach to this ideal that I have found is one in which the inequalities are not sufficient to cause any considerable accumulation of detritus in the crypt. In the great majority of the tonsils that are removed, either on account of their size or for the relief of constitutional disturbances, marked pocketing of the crypts is found. These pockets may occur at any point; they are quite as apt to be deep as superficial. The junction of a branch crypt with the main trunk seems especially suited for their development. I have found them in very close relation with the capsule.

Any operation, therefore, done on the tonsil for pathologic conditions in the crypts, and consequent toxic absorption from them, must have for its object their complete obliteration. This can be accomplished only by the complete removal of the tonsil. Operations in which the epithelial face only of the tonsil is cut away, or at best in which a very considerable part of the deeper portion is left, are likely to prove disappointing; the crypts remain, less deep it is true, perhaps in many cases more capable of drainage, but always possible sources of infection and toxic absorption.

THE EPITHELIUM OF THE CRYPTS.

The epithelium of the crypts, like that of the surface, is of the stratified squamous variety. It presents many interesting changes with age, which have an important bearing on the question of absorption from the crypts, and are due entirely to the action of the lymphoid cells upon it. At birth, and up to about the fifth month of infancy, the crypts already formed by the expulsion of the central core show an epithelium very similar to that of the surface. It is many layers in thickness, compact, and has a well-defined base which is indented by numerous papillæ. Leucocytes have already invaded it, but not in sufficient numbers to affect its integrity. Between the fourth and sixth month of infancy the germinal centers of the lymph nodes first become clearly defined; the lymphoid cells become especially active, and the epithelium of the crypts is invaded by such numbers of them that its basal outline becomes obscured and the deeper layers of its cells are separated from each other by masses of lymphocytes, and appear as epithelial fingers extending from the surface of the crypts into the lymphoid tissue. This process goes on until it is not too much to say that the epithelium is

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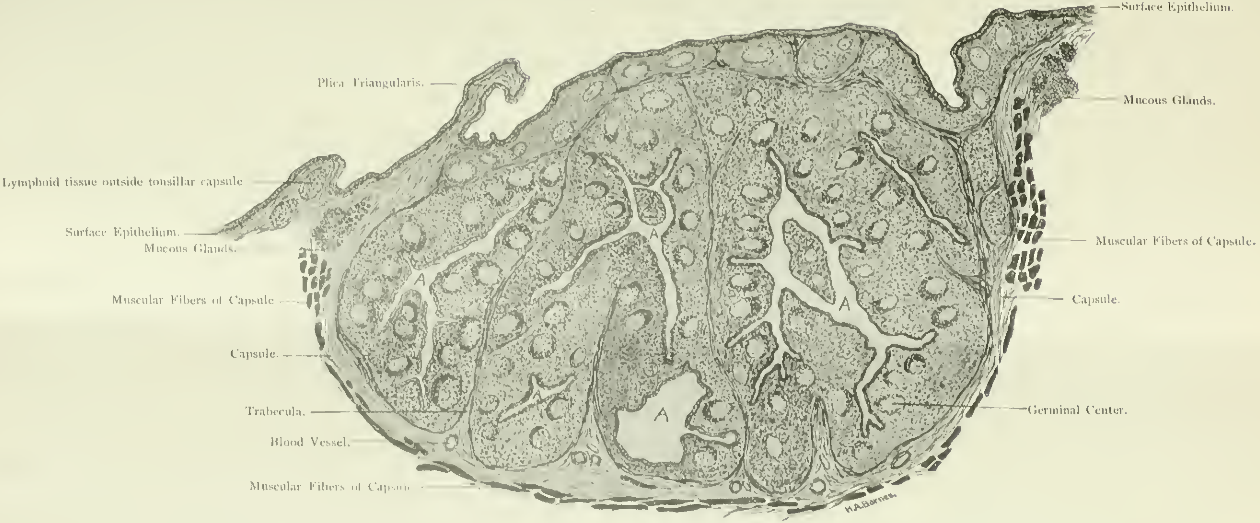
* Read at a meeting of the New England Otological and Laryngological Society, March 13, 1908.



A. Crypts, very irregular and dilated.

Cross section of human tonsil, age 11 years, dissected out in capsule X 10. This tonsil was moderately hypertrophied, with crypts greatly dilated and filled with detritus. It represents a condition found in a large percentage of the hypertrophied tonsils of childhood.

literally torn to shreds by the lymphoid activity. It presents on the surface an unbroken film of cells, only one or two layers in thickness, and even these are sometimes difficult to make out. In places, loose aggregations of epithelial cells may be discerned deeper below the surface, but their continuity is so broken that they hardly can be regarded as a definite epithelial tissue. This condition of cryptic epithelium is found in all tonsils from the age of one year up to about the age of puberty, when a general diminution in lymphoid activity usually takes place, and with it a change in the epithelium of the crypts the reverse of that just described. The number of migratory lymphocytes diminishes, the epithelial fragments are allowed to drop together and form a more definite and compact membrane, which, however, never attains the uniform solidarity and thickness of the surface epithelium. At the same time the fibrous reticulum immediately below the epithelium may become compact and practically free of lymphocytes; it then forms a well-marked tunica propria of the cryptic mucosa.

This regeneration, so to speak, of the cryptic epithelium is by no means so general or so complete, nor is the age at which it takes place so constant as its earlier disintegration. Many adult tonsils show great activity of the lymphoid tissue and a cryptic epithelium approaching the childhood type. This is especially true of the epithelium opposite the germinal centers, where the migration of lymphocytes continues most active. In the non-hypertrophied tonsil of the adult, however, we may expect to find a fairly compact cryptic epithelium.

The structural strength of its epithelium is, I think, a very important factor in determining the amount of absorption that may take place from the crypt. Without considering other forces of immunity, it will be seen from the above description that the cryptic epithelium of the tonsil of childhood, and of the hypertrophied tonsil of the adult, considered as a mechanical force, can offer no very great obstacle either to the invasion of bacteria or to the absorption of their products; other forces must be responsible for immunity to infection. The quiescent tonsil of the adult, however, possesses an epithelium which in itself would seem to be a fairly effective defense against bacterial invasion.

THE CAPSULE.

As described above, in my explanation of its necessarily close relation to the blind end of the crypts, the capsule may be considered as a highly developed *tunica propria* of the faucial mucous membrane, separated from its epithelium by the development of the lymphoid nodules which compose the mass of the tonsil. As might be expected from this derivation, it completely invests all parts of the tonsil not covered by epithelium and is continuous with the *tunica propria* of the faucial mucosa. In microscopic sections of whole tonsils with the capsule intact, it appears as a compact layer of fibrous tissue with numerous elastic and striated muscle fibers interspersed. A number of trabeculæ of the same composition, except that muscle fibers are only occasionally found, are given off from its internal surface and extend into the substance of the tonsil between the crypts and separate it into lobes. The muscle fibers are said to be derived from the superior constrictor and from the pillars. Those that lie in immediate proximity to these muscles doubtless are so derived, but those that are sometimes found in the larger trabeculæ quite remote from the main capsule can hardly be accounted for in this way. A number of mucous glands are found in the capsule, being especially numerous at the sides opposite the faucial pillars. Blood vessels appear at intervals, the larger of which are seen at the junction of the trabeculæ with the main capsule, from which point they supply the tonsil through the trabeculæ.

The capsule is thin, but tough. In none of my specimens is it over ½ mm. in thickness, except at those points near the pillars where the dissection was accomplished with a cutting edge. It is quite easily separated from the surrounding tissues at its upper half; at its inferior half it is much more adherent, since it is at this point that the larger vessels enter the tonsil.

The structure of the capsule, its toughness, and the ease with which it may be separated from the underlying tissues, make the operation of dissection of the tonsil "in capsule" a very practical one. The dissection may be accomplished largely with blunt instruments after the initial incision through the mucous membrane, but at its lower half the capsule is usually so adherent as to require a cutting edge or a snare to complete the separation. The operation is incomparably neater and more thorough than any other, and is especially to be recommended in all cases in which the tonsil is suspected to be the source of a systemic infection.

The question of hemorrhage after this operation is important. A just estimate of this danger, however, cannot be given until the operation is more generally done. Anatomically, bleeding would seem to be more likely to occur, for the reason that the blood vessels are severed in a tough fibrous tissue which allows them little chance for contraction or retraction. For this reason I prefer the modified operation in which the more adherent part of the tonsil at the lower half of the capsule, at which point the vessels enter, is separated with a snare.

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RESULTS IN ADENOID AND TONSIL OPERATIONS. A STUDY OF A SERIES OF CASES.*

BY J. PAYSON CLARK, M.D., BOSTON.

Early in the summer of 1907 I had sent out, from the Throat Department of the Massachusetts General Hospital, the following notice, on postals, to children who had had adenoid and tonsil operations between Aug. 31, 1903, and Aug. 31, 1904: "The Throat and Nose Department of the Massachusetts General Hospital is desirous of knowing your present condition and whether or not you have been improved by the operation performed here. Will you please report to the Out-Patient Department of the hospital on Fruit Street between 9 and 10 any week-day morning within the next ten days. The presentation of this card will admit you free." The year 1903–4 was chosen because it was the first year of our new system of record keeping and because it was thought the results would be more valuable than those of a more recent year. The total number of cards sent out was 595. These were not sent all at once, but a certain number weekly for a number of weeks. This method was pursued in order that we should not have too large a number reporting at once. As a matter of fact, the responses were exceedingly disappointing as to number, amounting in all to 73, or a little over 12% of the cases to whom notices were sent. Between three and four years having elapsed since the operations, many of the patients had doubtless moved so that the cards did not reach them and others lived at too great a distance to be able to come in easily. But even taking these factors into consideration, the proportion responding seems a very small one.

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* Read at a meeting of the New England Otological and Laryngological Society, March 13, 1908.

All of these cases underwent the operation for adenoids, and most of them had the tonsils removed. But in a very few cases where the tonsils were very small, and there had never been any tonsillar symptoms or enlarged cervical glands, the tonsils were not touched. The adenoids were all removed by the Gottstein curette or some modification of it. The pharyngeal vault was generally scraped with the fingernail afterwards. The tonsils were excised by the cold-wire snare and punch or tonsillotome and punch, and sometimes, when the tonsil was very small, by the punch alone. Of the 73 cases 39 were boys and 34 girls. Thirty-one were five years old or under; 24, five to ten years old; 13, ten to fifteen years old, and 2 over fifteen. In 62 cases the general condition is now good, in 8 fair, and in only 3 poor. Of these 3, 1 has chorea, 1 mental deficiency, and 1 is recovering from a severe illness in no way connected with the condition of the throat. Mouth breathing was said to still persist to a certain extent in 35 of the cases which reported. In 3 cases the mouth breathing was evidently due to obstruction caused by a deviated septum and in 5 others to hypertrophied turbinates. In 1 case there was sufficient adenoid present to call for a second operation. In the rest of the cases in which mouth breathing was said to persist no obstruction could be found to account for it, so that we are compelled to fall back on " habit " as the explanation. I confess I was rather surprised at this persistence of mouth breathing in such a large proportion of the cases. Twenty-one of the mouth breathers still continued to snore more or less. Four cases in which enuresis existed were not relieved of this symptom by the operation. As these are all of the cases in which this affection was found, the inference, as far as these cases go, is that the presence of adenoids does not stand in any causative relation to enuresis. I wish to corroborate this inference from my experience in this subject so far as to say that I believe that the presence of adenoids is never the sole cause of enuresis and at most is only a very minor factor in its causation.

Twenty-eight cases were said to still have colds, but most of these not so frequently as before operation. In 60 of the cases it is stated that tonsillar tissue is still visible. In a few of these the tonsils had not been operated on because there had been no symptoms. But in the large majority of the cases the tonsils had been quite thoroughly removed, so that there would appear to have been a regrowth of tonsillar tissue in some of these cases. Twenty of the cases gave a history of one or two attacks of sore throat since the operation, but only 10 of these were described as tonsilitis, and of these 10, 8 had had only one attack. None of them were seen during an attack, so that we have only the patient's word that they occurred. Forty-nine cases gave a definite history of tonsilitis before the operation, and only 13 of the remainder are definitely stated not to have have tonsilitis before operation. At least two thirds, therefore, of the cases in which the tonsils were removed had no subsequent trouble from them, and it is probably fair to assume a much larger proportion. In about half of the cases it was noted that there were remains of adenoid tissue at the vault. In most instances this statement means that the vault was not perfectly smooth. In only one case was there sufficient adenoid to call for a second operation.

Twelve cases had had some illness since operation. Four had scarlet fever, 1 grippe, 2 pneumonia, 2 diphtheria, 1 whooping-cough, and 1 measles, mumps and chicken-pox. There is nothing about these figures to suggest any connection between the operation and any of these affections. In only 2 cases was there any secondary hemorrhage either from the adenoid or tonsils. The note on one of these cases says: " No hemorrhage until the second day after the operation, then patient reported at the clinic with slight bleeding." Note on the other case says: " Lost considerable blood night after operation." This is the parent's statement, and the bleeding apparently stopped without treatment. In 39 cases, cervical clands were palpable, but in most cases smaller than at time of operation. A number of these cases of cervical adenitis were evidently due to bad teeth.

Just a word as to the method of operation at the Massachusetts General Hospital; the instruments used have already been mentioned. The anesthetic is always ether, except a few cases, generally adults, which are done under local (cocain) anesthesia. The patient is placed in a chair in a sitting posture, sometimes with a pillow and sometimes the assistant's leg behind him. This is accomplished by an assistant standing with one foot on the ground and one on the seat of the chair behind the patient; this brings the assistant's knee about the height of the patient's neck and gives him very good control of the patient's position. He holds the head between the palms of both hands, controlling the mouth gag with the thumb and forefinger of one hand. It is sometimes convenient, but not necessary, to have a second assistant to hold a tongue depressor during the tonsil portion of the operation, but with a self-retaining mouth-gag one experienced assistant can do this fairly well. Patients are allowed to go home on the afternoon of the operation day, except in the rare cases where the hemorrhage at the time of the operation has been very profuse and the patient shows the effects of the loss of blood. In such cases the patient is kept over night or longer if necessary. No bad effects have been observed from letting the patients go home the same day. The great majority of the patients recovered from the operation in from two to four days. Seven were said to have recovered in one day and 9 in a week. The small number of cases in which the ears are mentioned, only 4, is probably due to the proximity of the Massachusetts Eye and Ear Infirmary, where the patients in whom the ear symptoms were marked would naturally go. There is no doubt that a systematic examination of the ears would have discovered symptoms in a large number of these cases, but in the presence of more prominent symptoms this examination was not made. I wish to gratefully acknowledge the share which Dr. D. Crosby Greene, Jr., and Dr. D. R. Ryder took in collecting these records.

Clinical Department.

THROMBOSIS OF THE LATERAL SINUS.*

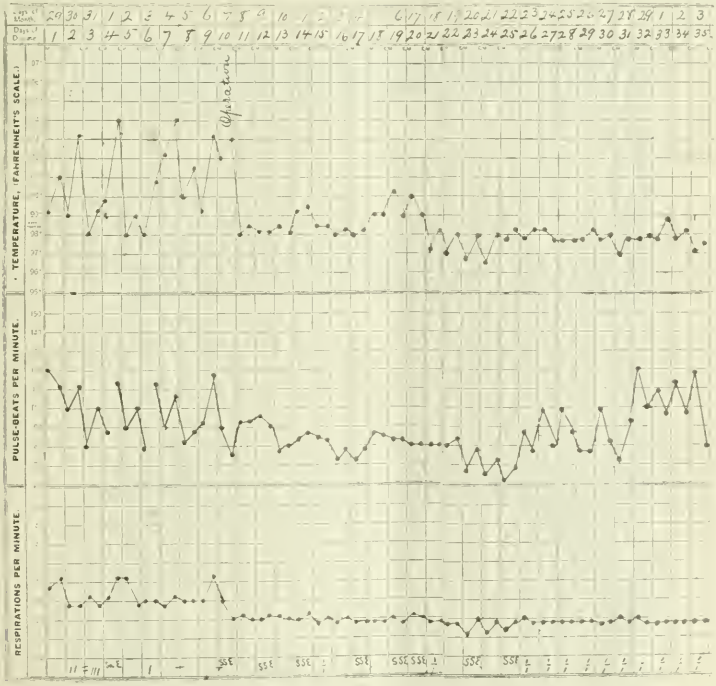
BY PHILIP HAMMOND, M.D., BOSTON.

The cases I am to show you this evening have been operated upon during my present service in this hospital, for thrombosis of the lateral sinus.

The fact that the patients are all here and, with the exception of the most recent case operated upon two days ago, out of danger, shows a very pleasing contrast to the picture with which many of us are familiar.

Case I. This young man was brought in one afternoon on a stretcher. He had been in a hospital in a neighboring city for nine or ten days previous to admission, and the diagnosis was somewhat obscure. He had been prepared for mastoid operation in that hospital but no operation had been performed. His temperature for nine days previous to admission here is shown in Chart No. 1.

The history in brief is that he entered this hospital on Feb. 7. He had had an abscess in the left ear four weeks before admission, but for the past three weeks there had been no discharge. He has had repeated chills during the past week. The canal was somewhat edematous, with considerable drooping of the upper and posterior wall. There was no mastoid tenderness and no tenderness in the neck. He had a white count



Case I.

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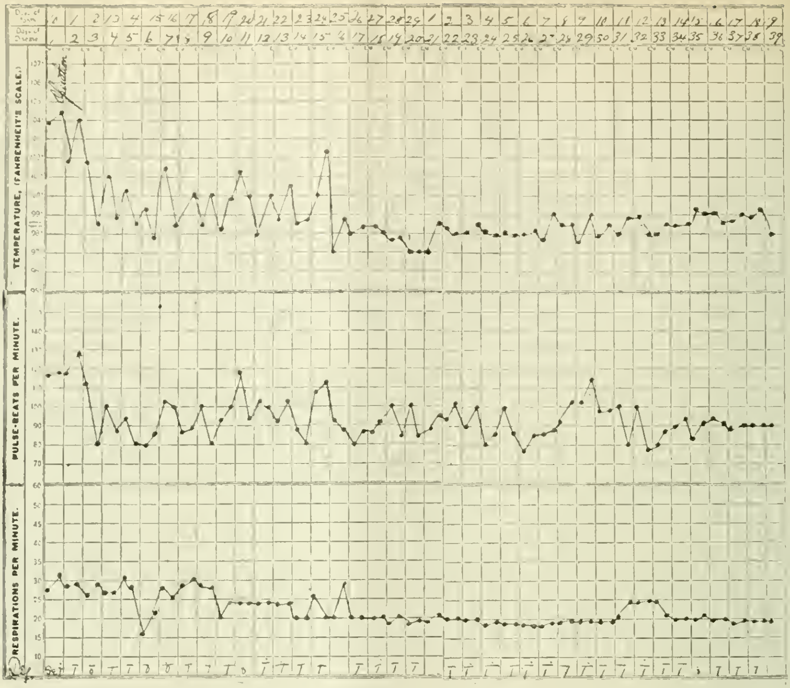
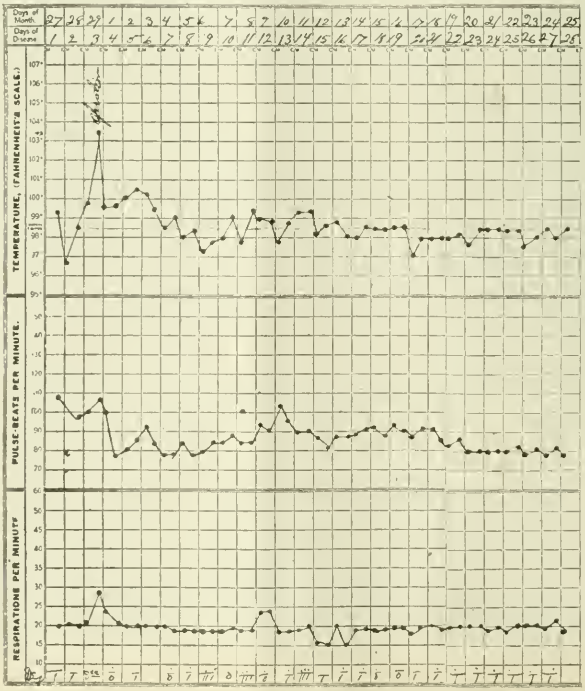
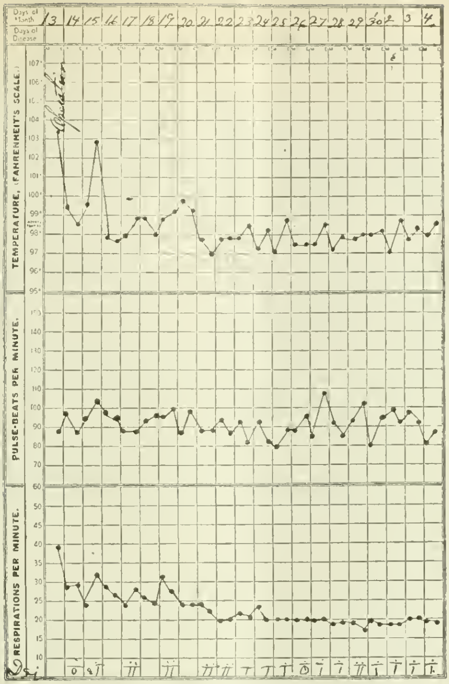


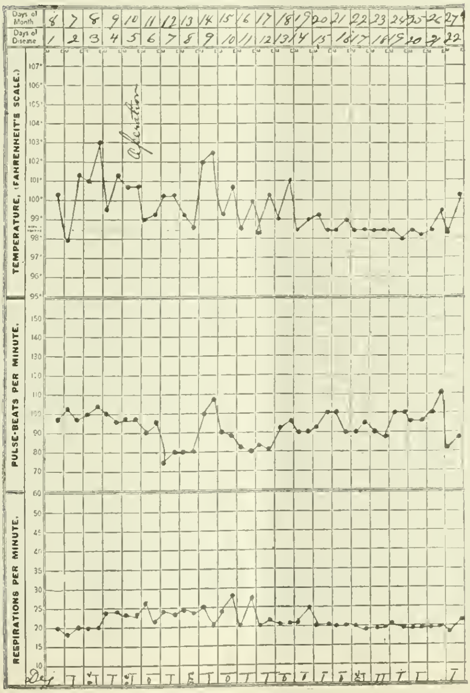
Case II.



Case III.


Days of Month
13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 2 3 4
Days of Disease
TEMPERATURE, (FAHRENHEIT'S SCALE.)
Operation
PULSE-BEATS PER MINUTE.
RESPIRATIONS PER MINUTE.

Case IV.


Days of Month
6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
Days of Disease
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
TEMPERATURE, (FAHRENHEIT'S SCALE.)
Operation
PULSE-BEATS PER MINUTE.
RESPIRATIONS PER MINUTE.

of 24,000. Examination of his eyes showed double optic neuritis.

I felt that unquestionably he had sinus thrombosis and operated with that in mind. The regular mastoid operation was performed and we found the sinus deep in and rather far back; the bone was necrotic. The whole mastoid was removed, including the tip, and the sinus then opened. It was found occluded, with a partially broken down clot.

Then I immediately prepared his neck and went in for the internal jugular. I made my incision rather low, nearly down to the clavicle. I had some difficulty in dissecting out the vein, which was almost as large as my thumb and firmly thrombosed. This condition existed as far down as I thought it safe to explore. I could not remove the whole of the thrombus, it extended down so far, nor could I get down to uninflamed vein. I finally tied a ligature through the clot and sutured up the wound in the neck. As much of the clot as could be reached was then removed through the mastoid. The boy's temperature almost immediately dropped to normal and has remained so, with one slight exception, during the rest of his stay in the hospital. The wound in the neck healed by first intention, leaving almost no scar, as you will see. What happened to the thrombus I do not know. The boy is now nearly well and has been at his home several days.

Case II. The second case is that of a girl whose temperature we have here. She came in Feb. 10.

She entered the hospital with a history of nine days' duration. She had some chills during those nine days, no nausea, vomiting or vertigo. The chief symptoms were chills and temperature. Examination showed no discharge from the ear; drum membranes slightly pinkish and could be seen plainly; drooping of posterior superior wall of canal; mastoid tender on the tip, slight edema over mastoid, slight tenderness of the neck. Her temperature was 103.8 at the time of admission and her white count 13,000.

Operation showed, what we found in so many of these cases, a small mastoid, inflamed, no pus in the bone, lateral sinus far forward close to canal, necrotic bone over the sinus, but no granulations on it. The mastoid tip was removed and then the sinus incised. There was free bleeding from that portion of the vessel that we opened. I felt certain that there was a thrombus somewhere inside the vessel. I did not wish to risk extension so I tied the jugular in this case. She had more reaction in her temperature, but has gotten well of her infection.

Case III. Here we have a girl who came into the hospital on Feb. 27 with a history of four weeks' duration of ear trouble. She had some pain and a discharge, lasting one day only, four weeks before admission. During the three weeks preceding admission there had been considerable pain. There was no swelling over the mastoid. The chief symptoms in this case were occasional nausea, complaint of chilly sensations and the temperature which she developed on the third day. When I saw her the first day I felt it was a simple subacute mastoid requiring ordinary routine treatment. We opened the drum and put on a Leiter coil. On the third day she developed a temperature of 103.5 or thereabouts. The white count was exceedingly low, 9,000.

At the operation we found in her case, as in the preceding ones, small mastoid, sinus far forward. The sinus was incised and a large clot found in it. This clot was removed so far as we were able to get at it. No venous hemorrhage was established at either end. I removed the whole outer wall of the vessel itself and packed the cavity. I did not tie the internal jugular in this case because the thrombus was not at all broken down. A culture was made of that clot and a streptococcus infection established.

Recovery has been good, the patient is now able to sit up and she has simply a clean, surgical wound behind the ear.

Case IV. This patient came into the hospital having first been seen outside by Dr. Tobey, and had a history of chills during the week preceding his examination. She had been vomiting for five days. There was swelling over the mastoid. Her temperature was 103, nearly 104 when he saw her. She was brought into the hospital and operated on by Dr. Tobey. The case presented some unusual difficulties on account of the marked obesity of the patient. The mastoid was sclerosed. The sinus was far forward.

To cut this story short, the sinus was slit, the purulent clot removed, the internal jugular tied. The neck wound healed by first intention and here is the patient practically well.

Case V. The fifth and last case is in bed in the ward, her condition being such that I felt it inadvisable to bring her down here tonight. She entered the hospital four or five days ago and remained in the ward without definite diagnosis for several days.

The history was that she had grippe two months ago, with discharge from the ear for a couple of weeks at that time. There was considerable swelling of the tissues of the canal and of the drum, and some mastoid tenderness. Her white count was low, 9,500.

I felt something must be done as she was maintaining a high temperature, and on going into the mastoid we found a rather small sinus, far forward as usual. Getting in on the sinus there was an escape of perhaps a couple of ounces of thick creamy pus. Enlarging the hole, the pus came through the inner table, and careful investigation showed that there was a hole through the lateral sinus. I slit this up and found it empty except at the ends, and there we found a firm clot. The internal jugular was cut down on to and ligated, as in other cases, and then the clot removed from both ends of the lateral sinus. Venous hemorrhage was quite free. The wound was packed, patient put to bed and the temperature has been quite satisfactory since that time.

When I tell you that these 5 cases have all been operated upon within as many weeks, it seems remarkable that so many should present themselves in so short a space of time. Yet the number is not large when we compare it with the number of mastoid cases treated here in the same length of time.

The favorable results obtained to-day are unquestionably due to earlier recognition of the condition and prompt intervention.

The symptomatology of sinus thrombosis is rather vague in many cases, as is evidenced here. I hope in a later communication to tabulate the results obtained from the study of a larger number of cases in order to present the concrete experience of this institution.

The question of the procedure which shall be employed in the treatment of the infected jugular vein is one on which various opinions are held. Some surgeons go so far as to contend that when diseased the vein should not only be tied, but the upper part excised. In a rather extensive experience this procedure has seemed to be seldom justifiable.

You will note that in Case I, where there was a most extensive thrombus, which was not removed, the recovery was rapid, the neck wound healed by first intention and following the operation there were no symptoms suggestive of pyemia.

The main thing is that we have learned to diagnose this condition when present and what to do to save our patients' lives.

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LYMPHOSARCOMA OF THE TONSIL.*

BY J. L. GOODALE, M.D., BOSTON.

The patient, a woman thirty-five years of age, was seen in April in consultation with Dr. Sawyer, of West Roxbury. She gave a history of having had, several weeks previous, pain in the left tonsil and adenitis. The condition at that time suggested a severe type of diphtheria of one tonsil, with swelling and exudate.

When I saw her, on the fifteenth of April, the left tonsil was transformed into a firm, reddened mass about the size of a hickory nut, with deep extensive ulceration. The glands on that side, below the angle of the jaw, were enlarged, firm and slightly tender. Examination of the blood was negative.

The clinical diagnosis was sarcoma; we excluded diphtheria and other acute infectious diseases, together with tuberculosis and syphilis.

A portion of the growth was removed and examined by Dr. J. H. Wright, who reported lymphosarcoma of a rapidly proliferating type.

The patient was sent to the Faulkner Hospital, on April 22, where she was attended by Dr. Sawyer and Dr. F. G. Balch. On May 4 the growth had rapidly increased in size and the glands were very much enlarged. The patient was breathing with difficulty. The question arose whether it would not be wise to excise the tonsil and the glands. I therefore examined her under ether with the object of taking out what I could of the growth. Dr. F. G. Balch planned to take out subsequently the glands in the neck. It was found, however, at this time that the growth had extended to the soft palate, infiltrating it, together with the base of the tongue, so that we simply allowed her to come out of the ether, expecting that there would be nothing to do except a later tracheotomy.

I will digress a moment to say why I followed the treatment that was now adopted. A young man had been under my observation for two years with Hodgkins' disease and had been getting slowly worse, losing about forty pounds. He developed, in February of 1907, a series of boils about the groin and came to me in April, after recovery from the boils, with very marked improvement in his general condition and in the lymph nodes all over the body. It seemed possible that there was some connection between the staphylococcus infection and the improvement in his Hodgkins' disease.

Recognizing the very close relationship between the Hodgkins' disease and lymphosarcoma, it seemed to me we might utilize this idea in the treatment of the case under consideration. Turpentine was therefore injected by Dr. Sawyer into the legs with the object of making abscesses. Two minims were injected on May 25 and 27, without result except that the sites of injection became rather red and painful. At the same time injections of staphylococcus aureus vaccine were given every three days. The turpentine was increased every two days up to twelve minims at each injection. About the first of June the patient began to show improvement. The swallowing was easier and the whole condition was better, so that on the first of June she could take beefsteak, potato, etc., and every day after that solid food was taken. On June 8 she was out of doors. On June 10 she was talking easily, while the growth in the throat steadily diminished in size. About the middle of June it had nearly disappeared. The turpentine injections, which up to that time had been borne without great discomfort, became very painful, and on the 14th she began to have for the first time localized necrosis of the skin from the turpentine injections.

On the 29th of June she was taken home. I saw her on the 10th of July, when she had on the site of the tonsil a large stellate cicatrix and absolutely no sign of new growth. The infiltration at the base of the tongue and soft palate had disappeared. The lymph nodes on the outside of the neck had become so small that only one about the size of a hickory nut was at all palpable.

In September I saw her again and found no change, while the cervical nodes had entirely disappeared. At Christmas time I heard that she was as well as she had ever been in her life.

In making deductions from the results of treatment in this case, we must discriminate between the turpentine and the vaccine. On theoretical grounds, I am inclined to attribute the result to the vaccine. This is chiefly for the reason that the boils and abscesses which we expected to excite by the turpentine did not appear until after the growth had nearly disappeared.

We have also an analogous effect observed in the treatment of other types of sarcoma by the vaccines of streptococcus and bacillus prodigiosus. The case is presented for your consideration without attempt to theorize, but with the hope that you will be led to give it a trial in this ordinarily fatal disease.

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TWO PALATAL ANOMALIES.

BY CARLETON R. METCALF, M.D., STATE HOSPITAL, TEWKSBURY, MASS.

The two anomalies in question are, first, a double uvula, and second, an unusual cleft of the hard palate.

McKenzie, in his article on double uvula, says that this condition is "one of the rarest of embryological curiosities." Such a declaration is perhaps too forcible, for patients thus afflicted occasionally appear at hospitals. Yet reports of cases of double uvula have been very infrequent.

Of the reported cases, the least common are those in which there are two distinct uvulæ, hanging side by side in the median line. McKenzie has collated 5 cases of this sort. Recent literature yields no others. More frequently one finds a rudimentary and a normal uvula in the median line; or two distinct uvulæ, widely separated. The incidence of these latter varieties has been noted by Shufeldt, Foster, Somers, Coues, Ohmann-Dumesnil, Gould, McKenzie and others.

The following case exemplifies the rare form of double uvula:

G. H., male, age forty-one. Entered State Hospital April 1, 1908. History of cystitis. Had had no throat symptoms nor had he ever noticed anything unusual in his voice.

Physically the patient was sound. No evidence of cystitis existed. His voice was normal. His tonsils were slightly red and hypertrophied. He had two distinct uvulæ, one on either side of the median line, their bases about one eighth of an inch apart. The uvula on the right was slightly anterior to that on the left. Each uvula was perfectly formed and a little larger than average size. The patient was unaware of the abnormality.

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* Read at a meeting of the New England Otological and Laryngological Society, March 13, 1908.

The case illustrates Meckel's remark that we have in these deformities an excellent illustration of the law that each half of an organ, when it develops, reaches the same size that the whole organ would have reached had the embryological process gone on in the natural manner.

The second case is one of congenital defect in the hard palate:

R. G., born April 2, 1908. Well-developed child at full term. The infant was nursed by the mother but did not gain. The mother had comparatively little milk, but the infant seemed unable to obtain even the small amount present.

An examination of the child's mouth showed an aperture in the median line, between the palate processes of the inferior maxilla, about 1 cm. posterior to the anterior palatine fossa and about 3 mm. in diameter. The suggestion was made that the defect in the palate might be partly responsible for the inability of the child to nurse successfully. The infant was put on artificial feeding one week after birth. Various modifications were tried, administered for the greater part of the time with a dropper. Despite this change, the child continued to fail, became marantic and died on April 29.

Autopsy showed a patent foramen ovale, a moderate ileocolitis and the cleft in the palate described above. The hard and soft palates and the uvula were otherwise normal.

Von Bergmann says of this abnormality:

"The partial cleft, the uranocolobom of the hard palate, is subject to the most numerous variations.

"The rarest of all, according to von Langenbeck, is where the cleft is present between the palatine processes of the superior maxilla only, while the horizontal processes of the palate bones, the velum and the alveolar arch are normally developed."

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CASE OF TWIN INTRA- AND EXTRA-UTERINE PREGNANCY. OPERATION WITHOUT INTERRUPTION OF PREGNANCY.

BY EDWARD L. PEIRSON, M.D., SALEM, MASS.

Mrs. B., aged thirty-eight years, sent for me Oct. 2. On arrival at her home, three miles from my house, on a farm, I found her in a very weak state, with all the symptoms and signs of a ruptured extra-uterine pregnancy. I had her immediately removed to the hospital, and operation showed the abdominal cavity full of blood and a ruptured right tube due to ectopic pregnancy of about two months. A later history showed that she menstruated the last time early in August, had been having sharp pains in her right side for about a week, and in the early morning of Oct. 2 had very severe pain and became very faint and weak. She left the hospital on Nov. 4, and I delivered her of a full-term, mature and perfectly developed male child on May 4. I did not see her from the time of her discharge from the hospital, Nov. 4, until summoned for the labor. The child weighed over nine pounds and was the twelfth child born to her at full time, and according to her statement was as large or even larger than the majority of her children at birth. There is no doubt the child was the full nine-months. She states no intercourse took place with her husband before December.

It seems this is undoubtedly a twin pregnancy occurring in August, one child in the tube and one in the uterus. The former ruptured and she was operated upon without disturbing the uterine pregnancy. Unfortunately in the hurry of operating on a desperate case no note was made of the size of the uterus at that time.

Reports of Societies.

NEW ENGLAND OTOLOGICAL AND LARYNGOLOGICAL SOCIETY.

A meeting of the society was held March 13, 1908, at the Massachusetts Charitable Eye and Ear Infirmary, Dr. A. Coolidge, Jr., in the chair; Dr. W. F. Knowles Secretary.

Dr. J. L. Goodale read a paper on

LYMPHOSARCOMA OF THE TONSIL.[1]

Dr. J. Payson Clark read a paper

RESULTS IN ADENOID AND TONSIL OPERATIONS. A STUDY OF A SERIES OF CASES.[2]

Dr. D. A. Heffernan read a paper on

REMOVAL OF THE TONSIL IN CAPSULE.

(Published in this Journal, April 16, 1908.)

DISCUSSION.

Dr. H. P. Mosher: In connection with this question of dissecting out the tonsils I have done a certain amount of work upon the anatomy of the tonsil at the medical school. I have brought here to-night a number of specimens illustrating certain important points. I will state briefly what these points are. The readers have spoken of most of them in their papers.

Dr. Barnes dwelt on the thinness of the capsule of the tonsil. It is hard, of course, to get tonsils of any size in the dissecting room. In all the specimens which I have examined the capsule is extremely thin. One of the speakers spoke as if the capsule was thick. It is not, and I feel that it would be very easy in using the finger to dissect out the tonsil to tear into or through the superior constrictor muscle.

Perhaps the most important point about the applied anatomy of the tonsil is the fact that the upper part of the tonsil is attached to the superior constrictor muscle very lightly. If an incision is made through the upper inner edge of the anterior pillar, and the plica and the anterior pillar turned outward, the upper pole of the tonsil is easily dissected free so that the tonsil can be turned inward and downward. About half way down the outer surface of the tonsil, however, the attachment to the constrictor becomes much firmer and it is harder to dissect the tonsil free. The reason is found upon examination to be this: Over the lower half of the tonsil the capsule of the tonsil and the fascia of the superior constrictor are firmly blended together. To the outside of the superior constrictor at this point the stylo-glossus muscle runs forward to gain the side of the tongue. The capsule of the tonsil, the fascia of the superior constrictor and the stylo-glossus muscle are all firmly united. This accounts for the statements made to-night that the dissection of the lower part of the tonsil is more difficult that the dissection of the upper half.

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[1] See Journal, p. 409.
[2] See Journal, p. 403.

To return to the capsule of the tonsil. I found in quite a number of cases that it was so thick it was impossible to get the tonsil out without taking the fascia of the superior constrictor as well. The capsule and the fascia were one and the same thing. In one of the specimens which I have here to show I started the dissection of the upper part of the tonsil by cutting through the top of the anterior pillar and then freed the upper pole of the tonsil with a curved blunt dissector and turned the upper half of the tonsil down. I stopped when the resistance of the lower half of the tonsil was encountered. Then I approached the tonsil from the outside in the pharyngo-maxillary fossa and found that the blunt dissector had gone through the superior constrictor muscle and turned down a part of this muscle with the tonsil. When the finger is used to dissect the tonsil I am convinced that this must happen oftener than operators are aware of.

The greater part of the blood supply of the tonsil seems to come in at the bottom, at the posterior part, that is, in the more firmly attached portion of the tonsil. In my specimens a few vessels ran into the tonsil at the upper anterior part.

From our experience in dissecting out tonsils I believe that the danger of bleeding is greater than when the snare or the punch is used. I agree with Dr. Richards that many of the cases of bleeding after the dissecting operation are due to incomplete removal of the tonsil.

Dr. J. W. Farlow: I think in the hospitals and public clinics one does not get as good results as in private practice in one particular, and that is in straightening the teeth. It is not possible to do anything if the teeth do not articulate well. This means a great deal of expense, time and care on the part of parents, and poor patients don't have money or time to attend to it. In private cases we often get great benefit to the child from restoring mouth closure. This should be told the parents of the patients at the time of operation; otherwise, they will be very distinctly disappointed.

Dr. J. P. Clark: In regard to the removal of tonsils preventing infection, I think the cases which I reported show certainly that the methods we used at the hospital were satisfactory; 73 cases reported, and only 10 of those cases, in three to four years, had any attacks of tonsillitis. We must allow a certain amount of leeway for the rapidity with which cases are done in the hospital.

It seems to me the important part is to remove the upper part of the tonsil where the crypts do not drain properly. If they are not properly removed infection may take place and tonsillitis recur. I think to prevent infection all that is necessary is to remove the crypts thoroughly, that portion where the crypts open upward. I think it would be a great pity in dissection of the tonsil for this radical method, which has been spoken of to-night by Dr. Heffernan, to take the place of the more conservative methods. If the tonsil is to be dissected out I think combining the methods would be better and equally satisfactory so far as removal of the tonsil is concerned; that is, dissection of the upper part of the tonsil and then removal of the lower part by a snare such as Dr. Barnes and Dr. Richards spoke of.

Dr. G. L. Richards: I would like to discuss two or three phases of this subject. First, as to what Dr. Heffernan said, I have some specimens to show to illustrate some points he has spoken of. Dr. Heffernan stated that it was impossible, as I understood him, to take out the tonsil completely and thoroughly with a snare. If you will notice the specimen which I will pass around, which was removed with a cold wire snare, you will see that it has a complete capsule, disproving that statement.

Secondly, he stated that it requires an instrument, a knife or something of that sort, to separate the tonsil properly from its attachments and begin dissection.

Some years ago I was in the habit of using my finger in separating what we then supposed were adhesions of the tonsil, but which I am now convinced are foldings in of the anterior pillars. I gradually found that it was easy with the fingers to separate this and get in between the tonsil and its attachments to the pillar in front, and gradually I found I could get all around the tonsil without much of any trouble. In other words, with very little trouble, you can orient the tonsil with a perfectly clean forefinger and dissect out the entire tonsil; no other instrument is needed, and every tonsil here, and I am quite sure that every one contains the capsule, was dissected with no other instrument than the forefinger. By dissection I mean the freeing of the tonsil of its superior and lateral attachments so that the enucleating instrument can completely encircle it.

The question of hemorrhage comes up here, and it is very important. As a rule we have hardly hemorrhage enough to say so. The first essential for the operation is a good vulsellum forceps. I would like to pass this one of my own design around. In the old method, after we got our tonsil separated, we had to take the tonsillotome and grasp the tonsil with the vulsellum through the ring of the tonsillotome. After some effort I have gotten a vulsellum which has jaws which hold and do not tear, which will take hold of any type of tonsil and will hold, and will hold the submerged one pretty well, and over which the enucleating instrument can be placed. In actual use I dissect the tonsil all the way around with the finger. In a submerged tonsil you find the tonsil will disappear; it has slipped backward and you may need a hook to draw the anterior pillar forward, then grasp the tonsil with the vulsellum, make any number of attempts, but get hold of it. If the dissection is not finished you can do it with your finger or with any type of dissector one wishes. The double edge curved knife of Robertson answers very well and can be used without much of any danger of producing hemorrhage. If you have once grasped the tonsil you can continue the operation with the scissors or with any blunt instrument. You can see the tonsil very well and bring it practically into the middle of the throat; then you can use any type of instrument you please, using strong traction and making no attempt to detach the tonsil until the instrument is entirely behind and external to the tonsil.

Contrary to the opinions here expressed, I find as a rule that there is practically no bleeding. To offset the bleeding which may occur I have ready a pad of cotton or gauze on a long forcep, soaked in peroxide hydrogen, thrust this into the hole made by the removed tonsil, and as a result we have no bleeding. When bleeding does occur it is usually due to the fact that we have wounded the pillar somewhere or have not got all the tonsil.

In one case in my experience I was much surprised at the amount of bleeding. I was quite sure I had not got it all. I applied pressure for quite a while and finally succeeded in getting hold of the rest of the tonsil and drawing it out and cutting it all out, and presto, the bleeding was all over.

After some tonsil operations of this kind it is necessary to put the finger in the cavity because not infrequently the cut will have been made diagonally, and although you will be sure that you have got the tonsil all out and there is nothing to see, nevertheless a piece up in the supra-tonsillar fossa will be felt by the finger and you can grasp it and bring it down and cut it out. It is essential to get that or you may have peritonsillar abscess from the small piece that remains there.

I was much interested in Dr. Clark's remarks in reference to his experiences with these children.

In Vienna I was told this summer that it was not necessary to get the entire tonsil. In big hospitals the cases do not come back to you the same as if you were in private practice, where you would have patients come back and say, "Doctor, you took my tonsils out such and such a year and I am still having tonsilitis." If physicians will look over their past cases I think they will be surprised to find some cases where something was left. I have had several cases that illustrate this. In one of these cases a general practitioner took out the tonsils three years ago; I operated on them a year later and supposed that I took them out thoroughly, but lately the mother said to me: "Doctor, the tonsils have grown again." I said, "I don't believe it," but sure enough, when I looked I found that the tonsil had indeed proliferated, and yet after each operation nothing visible had been left. That shows that they will recur and proliferate again if the capsule is left, and shows the necessity of getting it out.

As to the question of anatomy, I have a specimen here which I think you can see shows very well the tonsillar anatomy, if you hold it to the light, and I have a drawing of it showing muscular fibers, connective tissue and capsule. It shows very well also under the microscope what Dr. Barnes spoke of, not only muscular tissue immediately adjacent to the capsule on the outer side, but that there may be muscular fibers within the tonsil itself.

A good deal of the recent literature on the subject of the tonsil seems to have been written by gentlemen who have not known just what they were going to do; "eradicate by scissors, snare or punch," they say. I do not see that there is any necessity for doing any curetting, or any tonsil punching, if you once grasp the tonsil and its capsule and if, after operation, you feel to see if you have got it all. It seems impossible to get all of it near the base where the large vessels are, and what is left there does not seem to make trouble, but it seems essential to get everything that is superior to that.

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AMERICAN SURGICAL ASSOCIATION.

MEETING AT RICHMOND, VA., MAY 4–6, 1908.

(Continued from No. 12, p. 382.)

LATE RESULTS (TWO YEARS OR MORE) AFTER OPERATIONS FOR BENIGN DISEASES OF THE STOMACH AND DUODENUM.

MR. B. G. A. MOYNIHAN, M.S., F.R.C.S., of Leeds, England, in estimating the value of surgery in nonmalignant diseases of the stomach, reviewed the records of his operated cases to the end of 1905. They are 281 in number and are classified as follows:

1. Perforating ulcer of the stomach or duodenum.
2. Cases for which hemorrhage has been the immediate cause of urgent interference.
3. Cases of chronic ulcer, etc.
4. Cases of hour-glass stomach.

Of the 281 patients, recent information is at hand in reference to 265 cases. In class 1, of 27 cases of perforating ulcer operated upon, 18 patients recovered. In class 2, 27 patients submitted to operation for acute hemorrhage, 23 of whom recovered. In class 3, the patients number 205; among them were 2 fatal cases and 214 operations. A very full classification is given for analysis. In class 4, there were 22 cases made up of 7 males and 15 females. The total mortality in this group is 3.

A summary of the number of cases in all the groups gives the following results:

	Total Number.	Recovered.	Died.	Since Dead.	Cured.
Group 1	27	18	9	0	16
" 2	27	18	9	0	16
" 3	205	203	2	15	159
" 4	22	19	3	1	17
	281	258	23	16	208

The present condition of all the patients now alive is as follows: 211 patients are cured, 9 are improved, 12 are no better, 9 are doubtful, 6 not recently reported; 34 patients are dead; 18 as a result of the operation, 7 of carcinoma of the stomach, 9 from other causes unconnected with the disease of the stomach or the operation performed for its relief.

Among the lessons to be drawn from the history the following points are submitted: That the operative treatment of stomach disorders should be confined exclusively to those cases in which an organic lesion is present. In cases of acute perforating ulcer, the perforation should be closed or the ulcer excised. When the ulcer lies upon the lesser curvature nothing more is necessary than this. When a non-malignant lesion is discovered the treatment appropriate to it depends upon its position in the stomach. If the ulcer be prepyloric, pyloric or duodenal, gastro-enterostomy should be performed. It is desirable also to infold an ulcer whenever possible. The most satisfactory method of gastro-enterostomy is the posterior no-loop operation, with the almost vertical application of the bowel to the stomach. Regurgitant vomiting occurs as a result of the "loop" operation, whether anterior or posterior. It is relieved almost certainly by an entero-anastomosis. In cases of hour-glass stomach the surgical treatment necessary presents special difficulties on account of the frequency of a dual lesion — one in the body of the stomach, one at the pylorus — and double operations have consequently to be frequently performed.

STUDY OF GASTRIC AND DUODENAL ULCERS WITH ESPECIAL REFERENCE TO THEIR SURGICAL CURE.

WILLIAM J. MAYO, M.D., limited his paper to a discussion of gastric and duodenal ulcers. In the series reported the average duration of the symptoms was over twelve years and medical treatment had failed to effect permanent cure. Only cases failing to yield to reasonable medical treatment, it is said, should be considered surgically. The opinion as to cure is based upon the condition of the patient two years or more after the operation. All of the cases of ulcer and kindred diseases of the stomach and duodenum operated upon by Drs. C. H. and W. J. Mayo, since 1893 to April 20, 1908, are classified. Total number of operations, 824. Total number of patients operated upon, 765. Of 543 cases of ulcer operated upon, 27 were acute perforations. All of the cases of acute perforation treated by simple suture, with one exception, recovered and remained well. Twice in chronic cases the base of the ulcer had been cut out, producing an effect similar to acute perforation. The defect was closed, good results following. In more than 300 posterior no-loop gastrojejunostomies with the intestine sutured to the stomach in its normal position downward and to the left, performed for ulcer of the stomach and duodenum, there is reported a mortality of less than one per cent, and but three cases have required secondary operation upon the stomach for any cause. In all "loop" operations, anterior and posterior, the intestine is applied to the stomach downward and to the right, but in the "no-loop" method this sometimes caused angulation, turning the jejunum at the duodeno-jejunal angle rather sharply from its normal position and occasionally caused chronic bile regurgitation. Excision, the operation of Finney and the operation of Rodman, it is remarked, each have a field of usefulness in suitable cases. Three hundred and seventy-nine cases of ulcer of the stomach and duodenum were operated upon previous to June 1, 1906, covering a period of two to fifteen years since operations have been traced. In 318 actually demonstrated ulcers, 80.7% were cured, 9% improved and 4.2% unimproved. Six per cent died in the years following operation from various causes, only two of which were connected with the stomach. After operation for ulcer patients require medical supervision until cure is established.

END RESULTS FOLLOWING OPERATION FOR BENIGN DISEASES OF THE STOMACH AND DUODENUM.

Dr. John B. Deaver, of Philadelphia, asserts that empiricism, or the reliance on direct experience and observation rather than on theory, must be condemned as a rule in the scientific surgery of to-day. There should be a theory back of every application of practical means used to afford relief. An analysis of the end results in operation for benign diseases of the stomach and duonenum, while of great interest to the medical profession of to-day, will be of greater value and interest to the operator of the future when the more improved methods of operation shall have had an opportunity to show their worth with increasing age. Dr. Deaver has traced 66 of the patients upon whom he has performed stomach operations for benign disease. Of this number 44 are free from all gastric symptoms, 9 are greatly improved, 5 are unimproved and 8 have died. These figures give a percentage of cures of 66.6; of patients greatly improved, 80.3. A division of the patients is made from the operative viewpoint and the percentages of cures and improvements given. An analysis of the various diseases of the stomach and duodenum for which operations were performed and a list of the cases traced in more or less detail are included in the paper. Dr. Deaver concludes that:

The operation of choice should always be performed when feasible; when not feasible, the operation of necessity.

All cases of stenosis of the pylorus, whether due to a neoplasm, cicatricial contraction, hyperplasia, pyloroplasm or what not, should be treated by operative interference, preferably by posterior gastrojejunostomy.

All cases of ulcer of the stomach which do not respond to medical treatment promptly and the various sequelæ of this disease should be treated by operation.

All cases of ulcer of the duodenum which do not respond promptly to medical treatment should be treated by operation.

His preference in performing gastro-enterostomy is by the posterior gastrojejunostomy, no loop, clamp route.

HOW FREQUENTLY DO GASTRIC ULCERS BECOME CARCINOMATA?

Dr. William L. Rodman believes gastric carcinomata due in at least 50% to a previous ulcer. Though statistics vary concerning the frequency of the occurrence, the latest studies give the highest percentage. He gives the statistics of Sonnichsen, Klausa, Stich, Mayo, Moynihan and Robson. Within two years Dr. Rodman has had nine cases of cancer in which there was an unmistakable history of ulcer. In some cases the classical symptoms of chronic ulcer are so marked that there is no suspicion of carcinoma, and even when the abdomen is opened mistakes have been made by those most experienced in gastric diseases. In other cases, after two or more years the symptoms change so that malignant degeneration is suspected. Tuffier has described another form in which the symptoms of ulcer are absent, or present only in slight degree, but in which the signs of cancer soon develop rapidly. Little is to be learned from gastric analysis, as the chemical characteristics may be the same as in simple ulcer. Rapid and regular diminution or disappearance of hyperacidity at intervals is the most important sign. This phenomenon probably indicates that cancer is developing. The difficulty of diagnosis is the strongest plea that can be made for early exploratory operation in all gastric cases of doubtful nature failing to yield to medical treatment within a reasonable time. Dr. Rodman advocates the *removal* of all suspicious lesions by simple excision, pylorectomy or partial gastrectomy, according to the conditions of the individual case.

GASTRIC AND DUODENAL ULCERS SECONDARY TO WOUNDS OF THE URINARY BLADDER.

John B. Roberts, M.D., of Philadelphia, made mention of a case of death from perforating gastric ulcer after suprapubic lithotomy which he had reported in 1887. A few years ago he lost a patient from massive hemorrhage due to ulcer of the duodenum occurring in a man who had suffered extraperitoneal rupture of the urinary bladder and other injuries. The probability is stated of gastric and duodenal ulcerations being pathological sequences of the bladder lesion. This would be similar to that which occurs when a duodenal ulcer arises as a complication of burning or freezing large surfaces of the human body. Dr. Roberts collected from literature and his own experience 16 instances of gastro-intestinal bleeding subsequent to operative or other lesions of the urinary organs. The result was death in 14 cases, recovery in 2. There were operations for: Cystotomy, 5; litholapaxy, 1; nephrotomy, 3; extravasation of urine, 2; nephrorrhaphy, 2. There were of non-operative cases: pericystic abscess, etc., 1; perinephric abscess, etc., 1; perineal abscess, etc., 1; making a total of 16. In seven of the ten fatal cases ulceration was found at autopsy. In several of the remaining cases no necropsy was made, and the question of the presence of ulcer of the stomach or intestines, therefore, remains undetermined.

Mention was made of the fact that Curling, in his classic paper published sixty-four years ago on duodenal ulcers secondary to burns, stated that he had seen similar ulcers in other surgical conditions than burns. Dr. Roberts quoted from papers published recently to show that a connection between abdominal and pelvic operations and post-operative hematemesis and intestinal bleeding occurred sufficiently often to suggest a pathological connection. The etiology of the gastro-intestinal lesions under consideration is obscure but is probably connected with the occurrence of thrombosis and embolism due to septicemia or toxemia. Cases were mentioned of such hemorrhage and ulceration occurring after operative procedures on regions distant from the abdomen and pelvis. Cases reported apparently prove that the post-operative bleeding and ulceration of the gastro-intestinal tract are caused by some more general pathological influence than local interference with the abdominal and pelvic circulation alone. Experimental and clinical evidence give credence to the theory that changes in the gastric and intestinal mucosa leading to fatal issue may be the result of several local influences or of a widespread pathological alteration in the cells and fluids of the body. Although such lesions are probably more apt to occur after interference with the pelvic and abdominal organs which are connected with the portal circulation, enough cases are on record to lead to the belief that a general condition, such as uremic intoxication, atheroma of the vessels, toxemia and infection, are instrumental in rendering the patient liable to the serious complication discussed. Investigation has been made by a number of experimenters upon the production of gastric and duodenal ulcers by interference with the nervous connections of the gastro-intestinal tract. The serious prognosis in cases of post-operative hematemesis or bloody stools was insisted upon. Various suggestions as to treatment were made.

INFANTILE HYPERTROPHIC STENOSIS OF PYLORUS.

Dr. Frank E. Bunts, of Cleveland, reported an operation for pyloric stenosis in an infant four and one-half weeks old. The pylorus was found thickened and hard and, deeming it impossible to perform a pyloroplasty, an anterior gastro-enterostomy was made. The child recovered and is living, eleven months from date of operation. Of 89 operative cases collected by Dr. Thompson in 1906 and 25 collected by Dr. Bunts 53 recovered and 61 died, a mortality of 55.5% distributed as follows:

	Cases.	Recovered.	Died.	Mortality. Per Cent.
Divulsion	27	13	14	51.8
Gastro-enterostomy	69	32	37	53.6
Pyloroplasty	17	8	9	53
Pylorectomy	1	0	1	100

No improvement, but rather a higher mortality was shown in the last 25 cases. In the author's conclusions it is observed that congenital and infantile stenosis are of decidedly different clinical significance; congenital pyloric stenosis calls for very early operative interference. Infantile pyloric stenosis develops after birth and is often amenable to medical treatment, but in the absence of improvement an early operation offers good prospect of recovery. Apparently there is not yet any positive way of distinguishing between the congenital and the infantile forms. In selected cases pyloroplasty offers results superior to those of gastro-enterostomy. There has been no recent improvement in operative results. The one great determining cause of death in practically all cases is delay, and it is obvious that until this obstacle is removed by the medical attendant, little or no improvement on the present statistics can be expected.

Dr. Willy Meyer, of New York, spoke of the complications following operations for stenosis of the pylorus and of the possible overcoming of these. A patient under his care had passed on the third day of convalescence into a deep coma, passing the stools and urine in the bed. Temperature and pulse showed no reason for the condition. The patient was given regularly every eight hours a hypodermoclysis of salines. On the fifteenth day he regained consciousness and went on to proper convalescence. In the secondary operation he prefers gastro-enterostomy plus enterostomy to the short loop.

Dr. John H. Gibbon asked the experience of the Fellows as to the occurrence of peptic ulcer of the jejunum as a sequel to gastro-enterostomy. In the absence of its mention in a report of over a thousand cases it would seem to be unusual.

Dr. George W. Crile, of Cleveland, referred to an unsurgical case rendered surgical by direct transfusion of blood at the time of operation. Although the hemolytic test of cancer is still in the tentative stage, of 66 cases 80% gave positive reaction to the test. This was confirmed by autopsy or by operation.

Dr. J. M. T. Finney has employed pyloroplasty for pyloric obstruction 48 times since 1903. Of these cases 4 have died. Autopsy showed the cause of death to be other than the operation. From the observations concerning gastro-enterostomy it would seem unreasonable to anticipate untoward results that have not yet manifested themselves. He regards the personal equation a determining factor in the choice of operations. Personally he gets better results with pyloroplasty. Except in a few nervous cases his results have been perfectly satisfactory. He endorses Dr. Rodman's dictum of resection in doubtful cases of ulcer. In inflammatory pyloric stenosis he believes pyloroplasty definitely contra-indicated and that gastro-enterostomy should be employed.

Dr. John C. Munro, of Boston, said that an analysis some years ago of their hospital cases showed that less than 20% of operated gastric ulcer cases had been failures. All of the cases were grouped under the long loop, double loop and short loop. Some of the results could be definitely traced to the difference in technic. Since that time the Finney operation had been employed almost exclusively.

Dr. Charles L. Gibson, of New York, asked whether the operations reduced the total acidity of the stomach contents.

Dr. John C. Oliver, of Cincinnati, has seen within the past two years four cases of congenital stenosis operated upon by gastro-enterostomy. Two were his own cases; two those of his colleagues. In one of the cases (a female infant) the symptoms appeared at two weeks of age. There was a distinct family history of stomach trouble for three generations. The mother of this child during her pregnancy developed tuberculosis of the glands at the back of the neck. The mesenteric gland of the child showed an early stage of tuberculosis.

Dr. Francis J. Shepherd, of Montreal, did a pyloroplasty upon a child three weeks of age. The child is now eighteen months old and in perfect health.

Dr. Leonard Freeman, of Denver, spoke of his satisfactory employment of linen thread for the hemostatic suture in from 50 to 55 gastro-enterostomies and related an experience emphasizing the necessity from time to time of examining the character of the catgut employed.

Dr. Willy Meyer, of New York, warned against making the loop too long.

Dr. John E. Summers, Jr., of Omaha, inclines to the belief that trauma is the cause of post-operative gastric and intestinal hemorrhage.

Mr. B. G. A. Moynihan does the posterior no-loop operation, making the anastomosis as close as possible to the beginning of the jejunum. He regards the point of importance to be not so much the direction of the jejunum as its application to the stomach in such a way that it lies easily. With mimicry so close that it is difficult to distinguish between ulcer and carcinoma, the ulcer should be excised. He appreciates the difficulty of its excision when it lies up on the lesser curvature. He attributes post-operative regurgitant vomiting of bile to a mechanical defect at operation.

He has had one case of peptic ulcer subsequent to posterior gastro-enterostomy. He has collected and will publish a report of 60 cases of peptic jejunal ulcer following gastro-enterostomy.

Dr. W. J. Mayo, in closing, referred to the fact brought out that there could be secured not less than 80% of permanent recoveries in gastric ulcers in which medical treatment had failed, and that something less than 10% more will be improved. The real difficulty in cases reported to be worse because of gastro-enterostomies he thinks lies in the fact that the medical diagnosis has not been confirmed at the operating table, and, because the operation has been done upon cases in which it should not have been done, the internist assumes the position that the cases are worse as the result of the operation. They have done the Rodman operation over twenty times. Rather than ask the medical man to turn over to him early cases of gastric ulcer, the surgeon should ask that he turn over cases of tumor the character of which he is waiting to determine. In these cases the surgeon can do better than the medical man if they are not malignant. If they are malignant it will put into the surgeon's hands a considerable number of malignant cases in time to cure them.

Dr. William L. Rodman dissents from the belief of Dr. Summers that post-operative hematemesis is due to trauma. His belief is based upon observations made upon dogs and inquiries of colleagues. He thinks the most rational explanation is that suggested by Dr. Roberts, that it is due to sepsis. He has used Pagenstecher's suture for the inner stitch, but following a gastro-enterostomy, in one case there was furious hemorrhage. Copious vomiting occurred and in one large vomited clot there was the Pagenstecher suture. He questions, therefore, whether it is well to use a Pagenstecher suture or a well-chromicized gut. He appreciates the possibility that the suture might have taken a downward course and caused trouble with the bowel.

STONE, TUBERCULOSIS OF THE KIDNEY AND PERINEPHRIC ABSCESS.

George Tully Vaughn, M.D., of Washington, D. C., states the causes of stone to be heredity, loss of balance between ingestion and assimilation, sudden chilling of the body, leading to deposit of the urinary salts which are held together by pus, blood or mucus. The symptoms are given. Tuberculosis of the kidney in the majority of cases is said to be secondary to tuberculous foci in other parts of the body. The symptoms, urinary, vesical, renal and general, are given. Stone in the kidney should be removed at once; impacted stone in the ureter as soon as it is evident that it will not pass. A calculous kidney should not be removed as long as there is a chance of saving it. Tuberculosis limited to one kidney should be treated by nephrectomy. If both are affected nephrostomy and drainage are advised. A few cases illustrative of the diseases discussed are given.

Patent urachus. Stones in both kidneys requiring four operations. The patient now is apparently in perfect health.

Another case was that of a woman thirty-three years old in whose case a stone in the ureter was removed measuring $2\frac{3}{4}$ inches in length and $4\frac{1}{2}$ inches in circumference and weighing 915 grains.

A third case was that of a man twenty-six years old who had had pain, vesical tenderness, frequent micturition and pyuria ever since an attack of gonorrhea four years previous. The symptoms pointed to the left side chiefly. At operation the left kidney, which was found to be a pus sac, was removed with the ureter as far as the brim of the pelvis. Improvement followed, but eighteen months later nephrostomy and drainage of the remaining kidney was done for six weeks. The patient regained his normal weight and returned to work after two years in the hospital, but there is still pyuria.

THE DIAGNOSIS AND TREATMENT OF KIDNEY STONE.

Dr. Arthur Dean Bevan, of Chicago, said that the work of the last ten years has placed the diagnosis and treatment of kidney stone on an established basis. Diagnosis is determined by a process of exclusion and is confirmed by the x-ray. When the diagnosis is definite the treatment should be surgical removal except in cases of small stones which may be passed, or in cases of extreme age, or in the presence of organic lesions which strongly contra-indicate operation. In single stone in the pelvis of a comparatively sound kidney the operation of pyelotomy with closure is the operation of choice. In cases with large stones and especially multiple stones in both pelvis and calyces, and in cases with considerable infection, nephrolithotomy with or without drainage should be resorted to. In cases in which stones are found in a kidney which is so altered as to be of little value to the patient, and where kidney sufficiency has been demonstrated and the other kidney is not involved, primary nephrectomy should be done. In primary stones involving but one kidney, pyelotomy and nephrolithotomy are comparatively safe procedures, carrying with them but $\frac{3}{4}\%$ of risk. When both kidneys contain calculi the dangers of the pathological condition and the operation for its relief naturally increase. Where because of infection and destructive processes nephrectomy is required, the dangers of the operation will depend upon the integrity of the other kidney and its functional capacity and the dangers resultant upon the surgical removal of the diseased organ. In Dr. Bevan's own series of 52 operations done for kidney stone there was but one death from nephrolithotomy and two deaths from secondary nephrectomies. Both operations were extremely difficult because of the necessity of digging the kidney remnant out of dense scar tissue due to long-standing perinephritic inflammation. On the whole Dr. Bevan believes that the diagnosis and treatment of kidney stone can be regarded as one of the great triumphs of modern surgery both from the standpoint of relieving suffering and saving life.

(To be continued.)

Book Reviews.

The Practical Medicine Series. Under the general editorial charge of Gustavus P. Head, M.D. Vol. II, General Surgery, edited by John B. Murphy, A.M., M.D., LL.D., Professor of Surgery in Rush Medical College. Series 1908. Chicago: The Year Book Publishers.

This valuable little book of 614 pages more than maintains the reputation of its predecessors, and we congratulate its editor on the great mass of new and interesting material which he has collected. As the editor himself says, he "is compelled to confine himself to exemplary articles on the various topics, as the bounty of the literature far exceeds the limitations of this volume for review or partial publication."

Among other new and striking subjects the volume deals with questions of immunity, the prophylaxis of tetanus and hydrophobia, the opsonic question, Bier's hyperemia, and new and rational methods of dealing with joint diseases.

On the clinical side we find new material on the subjects of heart wounds, surgery of the blood vessels, neurological surgery, gastric and intestinal surgery and similar topics.

The publishers inform us that the book is intended primarily for the general practitioner. However that may be, the book will be a boon to the general surgeon, for it abounds in such practical information as he may turn to its best uses.

State Board Questions and Answers. By R. MAX GOEPP, M.D., Professor of Medicine at the Philadelphia Polyclinic; Assistant Visiting Physician at the Philadelphia General Hospital. Philadelphia and London: W. B. Saunders Company, 1908.

This column of 684 pages, including the index, is a collection of questions from State Board examinations with answers. It gives naturally a definite idea of the general character of the questions asked at these examinations and would certainly be useful in the preparation for such examinations. It is not to be questioned that a person who had carefully reviewed the questions and answers in this volume would have attained an admirable general survey of medical theory and practice. The questions are arranged under subjects and are printed in large type. The answers are brief and adequate.

Quain's Elements of Anatomy. Editors, EDWARD ALBERT SCHÄFER, LL.D., Sc.D., F.R.S., Professor of Physiology and Histology in the University of Edinburgh; JOHNSON SYMINGTON, M.D., F.R.S., Professor of Anatomy in Queen's College, Belfast; THOMAS HASTIE BRYCE, M.A., M.D., Lecturer in Anatomy, Univerisity of Glasgow. In four volumes. Vol. I. Illustrated. Eleventh edition. London, New York, Bombay and Calcutta: Longmans, Green & Co. 1908.

The forthcoming eleventh edition of Quain's Anatomy is to appear in four volumes, the subject matter divided as follows: The first volume, Embryology; the second, General and Visceral Anatomy; the third, the Nervous System and Sense Organs; the fourth, the Bones, Ligaments, Muscles and Blood Vessels. It is designed that each of these four volumes shall be complete in itself, and each may be purchased singly. The advantage of dividing the subject of human anatomy in this way into several volumes is apparent. The size of the volume demanded for any complete presentation of the subject, if the material is to be compressed into one volume, is too cumbersome to permit of easy handling and is quite impossible for students. A new edition of Quain's Anatomy is always welcome and invariably represents progress. This volume on Embryology has been completely re-edited and improved through the addition of a large number of illustrations, as well as through alterations in the text. Biographical lists have been omitted, saving space, but we think detracting somewhat from the value of the volume. That these references may be found conveniently elsewhere does not wholly atone for this omission. The reediting of this volume has been by Dr. T. H. Bryce, of the University of Glasgow. The general form as regards text and arrangement remains the same, but it is not to be questioned that the illustrations have been materially improved and that the printing, always excellent, is even more finished than before. This anatomical textbook needs no special commendation. It has long been established as one of the very best.

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OVERWEIGHT AND UNDERWEIGHT.

DR. BRANDRETH SYMONDS has correlated a number of data from the records of 200,000 males weighed in their boots and as ordinarily clad; his deductions, set forth in a paper on "The Influence of Overweight and Underweight on Vitality,"[1] though made from the viewpoint of a medical inspector of a life insurance company, should, nevertheless, greatly help the practitioner.

The standard weight of little men increases steadily with age up to the forty-fifth year; to the year fifty among middle-sized men; to the year fifty-five or even sixty for those who are tall. The rule is formulated by Dr. O. H. Rogers that each added inch in height calls for an additional three per cent in weight, a rule which will fairly well apply to all but small men. Reliable standards for women have not yet been fixed; they must be considered, however, as a little lighter than those of men. Women at twenty are six to nine pounds lighter than men at the same height at twenty, but this sexual difference gradually diminishes with age.

The lowest death-rate does not coincide with the standard in weight, but is in the class about five per cent below the standard; persons under thirty years, who are five to ten per cent above standard, have also an unusually low death-rate. In life insurance the term "mortality" means the ratio of actual deaths to expected deaths; deaths expected to occur in a given group of individuals are calculated by means of a standard mortality table, allowance usually being made for the benefits of selection in the early years of insurance. Overweight is twenty per cent above the standard for the height and age, the standard of a man of forty years five feet six inches tall being one hundred and fifty pounds; he would be overweight should he pass one hundred and eighty pounds. Underweight is below eighty per cent of the standard. The effect of overweight is influenced by two fundamental factors, the percentage of overweight and the age. The mortality increases as the weight rises above twenty per cent in excess. Age is a considerable factor. Above thirty years the ratio of actual deaths to expected deaths rises with the percentage of overweight. For example, a group of men five feet six inches tall, each weighing one hundred and ninety-five pounds (which is thirty per cent too much), would have a mortality of one hundred and seventy-two as against one hundred expected deaths. On the other hand, thirty per cent excess weight at the age of twenty-two would give a mortality of eighty-seven per cent, not much larger than that of well-selected lives; but thirty per cent in excess begins at twenty-two to be dangerous. Long-lived ancestry does not reduce the excessive mortality of overweights above thirty years, whilst a short-lived ancestry is distinctly bad.

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[1] N. Y. Med. Rec., Sept. 5, 1908.

Most important are Dr. Symonds' observations regarding certain serious diseases, and a table is presented showing from what causes overweights and underweights die — for " none of them ever dies of obesity or emaciation." A tuberculous family history is not bad for overweight in the younger ages, for the excess weight should tend to overcome tuberculous predisposition, but underweight and tuberculous family history form an unfortunate combination, which gives a mortality of one hundred and eighty per cent in the ages below thirty-five; above that age the influence of tuberculosis depends upon the number of cases in the family. Where there are in a family two or more cases with underweight, the mortality is one hundred and seven per cent for all ages above thirty-five. In these older ages, however, the underweight who has had only one case of tuberculosis in his family runs but little risk, perhaps for the reason that he takes better care of himself. Underweight plus dyspepsia is a serious combination below the twenty-fifth year, giving a mortality as high as one hundred and fifty per cent. Symonds does not doubt that this combination often indicates incipient tuberculosis, so little advanced as to be indeterminable by physical examination. He can offer no deductions regarding cancer so far as overweight or underweight either among men or women is concerned. Diabetics are scarce among the underweights, but they are five times as numerous among the overweights. Overweights are a little in excess, whilst underweights are distinctly below the average in relation to cerebral congestions and hemorrhage, cerebral apoplexy and paralysis, as also the various forms of mental alienation. There is a decided excess among overweights regarding organic cardiac diseases, and as great a deficiency among underweights. Contrary to the general prognosis, pneumonia is nearly twice as fatal among underweights as among overweights; it would almost appear that overweights have a certain immunity to the pneumococcus, whilst their opposites are more than usually susceptible. Hepatic cirrhosis is three and one-half times as prevalent among overweights as in our general experience. Statisticians consider that this lesion is a very accurate index of the alcoholic habit of a class; this cirrhosis is below the normal among the underweights, as are also the other digestive diseases, thus showing their moderation in food as well as in drink. Bright's disease, both acute and chronic, is nearly as prevalent among overweights as in the general experience. Carbuncle is in great excess among overweights, perhaps by reason of unrecognized diabetes. Mortality is markedly increased with increased abdominal girth, and progressively as the latter exceeds the expanded chest.

No overweight dies of old age or senility, nor, indeed, attains the age of eighty; on the other hand, among 1,078 male underweights, forty-four passed fourscore and two reached ninety years. Overweight is, then, a much more serious condition than underweight, except in the young, when the latter may indicate beginning serious disease or tendency thereto. Life insurance companies now no longer accept overweights more freely than their opposites; they have rejected the old idea that an overweight had a reserve fund to draw upon in case there was a run on his bodily bank. The excessive weight, whether it be fat or muscle, is not a storehouse of reserve strength but a burden which has to be nourished if muscle, and which markedly interferes with nutrition and function if it be fat. For the best interests of health one should be near standard weight, within ten per cent at least, " for within that range is found the lowest mortality and the greatest vitality."

A POSSIBLE FUTURE FOR CATS.

It is reported that Professor Kitasato has recommended the systematic cultivation of cats as a means of combating plague. It has been generally accepted that the rat is the chief disseminator of the disease, and in the various attempts at prophylaxis many methods of extermination have been suggested, most of which have proved unsatisfactory. The suggestion is now made that, inasmuch as the cat is the natural enemy of the rat, and since the best method of combating disease is to use natural rather than artificial means, a more systematic cultivation of the cat in this capacity would be easy of accomplishment and efficacious. After considerable experimentation in the matter, Kitasato is credited with the opinion that of all animals which will attack rats there is none so practically available and the disadvantages of which are so little as the cat. In order to render cats most serviceable in this work a certain system is recommended. Among the matters insisted upon are that in plague-infected regions each house be required by law to maintain a certain number of cats, to cultivate cats of approved ratting ability, by investigating various breeds in different parts of the world, by encouraging the introduction and propagation of such breeds, and by stimulating interest in cat breeding with particular reference to their rat-catching ability. Vessels running between plague-infected ports should be obliged to carry cats, the number depending upon the size of the vessels. Buildings should be so constructed that no place should be accessible to rats which is inaccessible to cats, and finally, and certainly an important suggestion, that special companies of cats be placed in plague-infected districts, and the presence or absence of plague among them determined at fixed intervals. If, as is generally supposed, various pests have their particular enemies, active in their destruction, it would seem altogether reasonable that the domestic cat should be more fully utilized in its attacks upon its natural enemy, the rat. If we are ultimately to be free from our moth and caterpillar pests through parasites, it is certainly not unreasonable to suppose that the rat will finally meet its fate through the cat, which is so far capable of domestication that it can be controlled and conceivably trained to a certain degree. In any event Kitasato's suggestion is seriously made and deserves most careful consideration, bearing constantly in mind the possible danger of the dissemination of the disease through a secondary host.

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THE ELIMINATION OF TUBERCULOSIS.

One observes with unusual interest, in relation to the great International Congress on Tuberculosis now transpiring in Washington, how stupendous have thus far been the results of the fight begun in but recent years, and now waging against this scourge. In Prussia its death-rate during the last decade has been reduced 40%; in New York City during the past fifteen years, more than half; in Boston, 55%. In England, Dr. T. Bulstrode, one of Great Britain's medical inspectors, has called attention to the fact that in 1838 tuberculosis destroyed in England and Wales nearly 60,000 lives; in 1906, although the population within these boundaries has vastly increased, this disease destroyed less than 40,000 lives. The tuberculosis mortality in these parts of Great Britain was, in 1906, about equal to the decrease which obtained in the preceding three decades; therefore Bulstrode expressed the belief that should the decrease in the death-rate continue in the same ratio, consumption would disappear totally from England and Wales within the coming thirty or forty years. We now have the opinion of Dr. L. F. Flick, with all the weight of his authority as head of the Phipps Institute in Philadelphia, and as chairman of the committee having in charge the present Congress in Washington, that the "white plague" may now be given but fifteen years to disappear from the surface of the earth as utterly as has smallpox. In Philadelphia alone a reduction of 300 has been made in the mortality rate of the six months past as compared with the year before. "The total number of deaths resulting from consumption last year in the city of Philadelphia was 3,600, and if the same rate of progress is kept up for six years to come, consumption will be abolished." A conference, apart from that in Washington, has been held in September in Philadelphia; last year it was convened in Vienna, in the preceding year at the Hague, in Paris in 1905, at Copenhagen in 1904; each year since its organization in 1902 in a different country. And Dr. Flick declares that on every such occasion since the inception of these conferences, the members have reported "great strides made toward the eventual conquering of consumption," and that the conference of this year would be remarkable for the telling of a "progress twice as great as has been made in any year before."

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MEDICAL NOTES.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Sept. 22, 1908, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 63, scarlatina 33, typhoid fever 39, measles 20, smallpox 0, tuberculosis 41; cerebrospinal meningitis 0.

The death-rate of the reported deaths for the week ending Sept. 22, 1908, was 21.49.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Sept. 19, 1908, was 221, against 217 the corresponding week of last year, showing an increase of 4 deaths and making the death-rate for the week 18.62. Of this number 117 were males and 104 were females; 216 were white and 5 colored; 145 were born in the United States, 69 in foreign countries and 7 unknown; 38 were of American parentage, 140 of foreign parentage and 43 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 47 cases and 4 deaths; scarlatina, 27 cases and 0 deaths; typhoid fever, 47 cases and 1 death; measles, 18 cases and 0 deaths; tuberculosis, 41 cases and 13 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 12, whooping cough 3, heart disease 18, bronchitis 5 and marasmus 21. There were 18 deaths from violent causes. The number of children who died under one year was 74; the number under five years 100. The number of persons who died over sixty years of age was 40. The deaths in public institutions were 87.

Cerebrospinal meningitis, 1 case and 1 death.

Bequests. — Through the will of the late George Francis Parkman many public charities of Boston receive liberal bequests. Among the beneficiaries are: The Massachusetts General Hospital, $50,000; the President and Fellows of Harvard College, $50,000; the Home for Aged Men and Aged Women, each $50,000; the Children's Hospital, $50,000; the Newport Hospital, at Newport, R. I., $40,000; the Perkins Institution and Massachusetts Asylum for the Blind, $50,000. Should the city of Boston not accept a sum of money which the testator desired to have used in the improvement of its public parks, the Massachusetts Eye and Ear Infirmary and the New England Hospital for Women and Children will receive recognition. A late codicil gives the sum of $20,000 to the Children's Sanitarium and $10,000 to the Boston Floating Hospital.

The will of Capt. J. Putnam Bradlee, of Boston, which was filed Feb. 7, 1887, and which provided for the maintenance of certain relatives during their lifetime, now becomes operative. The following medical institutions, among others, are beneficiaries: The Massachusetts General Hospital, $25,000; Perkins Institution for the Blind, $25,000; Massachusetts Homeopathic Hospital, $25,000; Kindergarten for the Blind, $25,000; Massachusetts Eye and Ear Infirmary, $25,000; Free Hospital for Women, $20,000; Hospital Cottages for Children at Baldwinsville, Mass., $10,000; Home for Aged Couples, $10,000; Massachusetts Infant Asylum, $2,000; Sharon Sanatorium, $2,000. Through the death of Miss Helen C. Bradlee the foregoing bequests became available, and in addition, upwards of $600,000, which has been distributed by the trustees in equal part between the Massachusetts General Hospital, the Perkins Institution for the Blind, the Kindergarten for the Blind, and the Massachusetts Eye and Ear Infirmary.

NEW YORK.

Bequests. — By the will of Mrs. Jane A. Townsend, widow of Randolph N. Townsend, of New York, who died recently in England, the sum of $15,000 is left to the Presbyterian Hospital, to endow three free beds in memory of two deceased sons and a deceased daughter; $34,500 is also left to the Presbyterian Home for Aged Women in the city of New York. The largest public bequest is one of $50,000 to Yale University, which is to be applied to the endowment of a professorship of history, to be named, in memory of the testatrix's deceased son, " the Randolph N. Townsend, Jr., professorship of history."

Report of an Insanity Commission. — The first all-alienist commission of the state to pass on the validity of a plea of insanity as a legal defense reported to Judge Foster, on Sept. 11, the case of Mrs. Charlotte Hitchcock, who was indicted for the murder of her husband. The members of the commission, Drs. Allan McLane Hamilton, Carlos F. MacDonald and Frank Robertson, found that she was insane at the time her husband was killed, that she is insane now, and that she is an unsafe person to have at large. One morning a number of months ago the woman was found suffering from four bullet wounds and lying beside the dead body of her husband.

Opening of Public Schools. — The public schools opened this season with no less than 640,000 pupils, and the first day's attendance, Sept. 14, showed an increase of about 20,000 over last year's record. In many respects the most interesting feature of the new session was the opening of New York's first public school for deaf-mutes. There were only sixty-five children in attendance, but it is expected that as soon as the existence of such an institution becomes more generally known in the community this number will be largely increased. The building which has been selected for the purpose is one on East 23d Street which was formerly employed as a high school. This school receives deaf-mute children from all the boroughs of the city, and those living at a distance are conveyed to and from it free of charge. Miss Regan, the principal, is thoroughly qualified for the position, and she is assisted by a full corps of specially trained and experienced teachers, drawn from the best deaf-mute schools in the country, so that the pupils will have the benefit of the most improved modern instruction. Simultaneously with the opening of the schools Health Commissioner Darlington designated one hundred and fifty medical inspectors and one hundred and fifty nurses to look after the physical condition of the children.

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Current Literature.

NEW YORK MEDICAL JOURNAL.

AUG. 15, 1908

1. *GANT, S. G. *Local and Surgical Treatment of Chronic Diarrhea.*
2. HALSTED, T. H. *The Use of the Bronchoscope, Esophagoscope and Gastroscope.*
3. PAUL, C. M. *An Extension, without Use of Weights, for Fractures.*
4. MERZBACH, G. *Syphilis. Its Origin, Cause and Treatment.*
5. SKILLERN, R. H., AND BURVILL-HOLMES, E. *Preliminary Report on the Vaccine Treatment of Atrophic Rhinitis (Ozena).*
6. DONOVAN, J. A. *Headache and its Cure.*
7. TOMPKINS, E. P. *Pneumonia: One Method of Treatment.*

1. Gant believes that, as a rule, the primary cause of chronic diarrhea is situated in the colon. The treatment by drugs internally administered he believes is usually ineffective. He prefers to treat such cases at first locally by colonic irrigations. When such measures fail to cure after a few weeks or months trial, he advises a surgical operation. Colostomy he thinks should be discarded. Appendicostomy is the most popular operation. In his own 35 cases this operation apparently cured all but two. The appendiceal outlet was kept open from five to six months. Gant, however, prefers a new operation which he calls cecostomy, with an arrangement consisting of two catheters by which he can irrigate both the small and the large intestine. In certain cases when the functioning power of the gut is lost, due to very extensive ulcerations or strictures, Gant believes that a resection of all or a part of the colon is the only satisfactory treatment. [R. I. L.]

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

AUG. 15, 1908.

1. BREWER, G. E. *Acute Diverticulitis of the Sigmoid with Operation before Rupture.*
2. WALKER, F. B. *Intestinal Anastomosis; Presentation of a New, Simple and Aseptic Method.*
3. *PLUMMER, H. S. *Cardiospasm. With a Report of Forty Cases.*
4. FERGUSON, A. H. *A New Technic for Nephropexy.*
5. *MAYO, W. J. *Ulcer of the Duodenum, with Report of 272 Operations.*
6. LUND, F. B. *The Diagnosis at Operation between Chronic Ulcer and Cancer of the Stomach.*
7. PECK, A. H. *State Reciprocity in Dental Practice Licensing.*
8. BEVAN, A. B. *Medical Education in the United States; the Need of a Uniform Standard.*
9. OHLMACHER, A. P. *Therapeutic Immunization in Mixed Infection.*

3. Plummer reports 40 cases of cardiospasm, most of which presented considerable amount of esophageal dilatation. The cause of the spasm is largely speculative and Plummer has nothing new to offer on the subject. He believes that the treatment by dietetic measures, bromides, the frequent passage of large sounds and gastrostomy are, as a rule, ineffectual. Laparotomy with forceful dilatation of the cardia is not considered as warranted. Plummer prefers to use forceful dilatation by rubber dam balloons under hydraulic pressure. In 29 of his 40 cases there has been no recurrence. The relief is immediate and there is rapid gain of weight and strength. The esophagus tends to return to normal size. The number of dilatations required ranges from one to five with a few exceptions.

5. Mayo presents statistics of 119 cases of duodenal ulcer operated on by himself and his brother in 1906 to 1907. He secured information of 106. At the present date 82% of these were cured and 6% were unimproved. The operative mortality was 2.8%. Duodenal ulcer is really more frequent than gastric ulcer. On the other hand, duodenal ulcer rarely undergoes carcinomatous degeneration. Mayo believes, however, that in operating for gastric or duodenal ulcer, if no ulcer in any stage is found, a gastro-enterostomy will probably do the patient harm. [R. I. L.]

THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

AUGUST, 1908.

1. *LEWIS, M. J. *Splenic Anemia, Splenectomy and Recovery. With Studies of the Blood covering a Period of Seven Years.*
2. *ROBINSON, B. *Clinical Notes on Laryngeal Tuberculosis.*
3. *HESS, A. F. *Primary Tuberculosis of the Mesenteric Glands. Report of Infections with Bacilli of the Human Type.*
4. *EPSTEIN, A. A. *Blood Cultures in Typhoid Fever.*
5. VAUGHAN, G. T. *The Uncertain Results of Suturing Nerves.*
6. *WILLIAMS, T. A. *The Pathogenesis of Tabes Dorsalis.*
7. HUNT, J. R. *A Further Contribution to the Herpetic Inflammations of the Geniculate Ganglion. A Syndrome characterized by Herpes Zoster Oticus, Facialis or Occipitocollaris, with Facial Palsy and Auditory Symptoms.*
8. *ADLER, I. *The Present Status of Experimental Arterial Disease.*
9. *NICHOLSON, W. R., AND EVANS, J. S. *The Bacteriology of the Puerperal Uterus.*

1. Lewis' article is the report of a single case sufficiently described in the title. At the date of the writing of the article, three and a half years after the splenectomy, the patient was apparently in perfect health.

2. Robinson urges that more attention be paid to the examination and treatment of the larynx in cases of suspected or confirmed pulmonary tuberculosis. His treatment may be summarized as follows: Rest for the larynx by use of writing instead of speaking; local applications of lactic acid 10% to 80%; orthoform insufflation to relieve pain; in some cases removal of tissue by excision or galvano-cautery; and lastly, a measure upon which chief stress is laid by the author, — the continuous use of a perforated zinc inhaler with antiseptic solutions.

3. Hess carefully tabulates reported cases of primary mesenteric gland tuberculosis and draws from them as the chief conclusions that over 60% of these cases are caused by the bovine type of the tubercle bacillus. This is of great importance in view of the prevailing opinion, originated by Koch, that the bovine bacillus is not a danger to man. These bovine infections were most frequent in

children. In pathologic lesions and in clinical course the bovine and the human varieties of infection were indistinguishable. Three original cases are reported in which the infection was by human tubercle bacilli.

4. Epstein reports results of 158 blood cultures from 131 cases of typhoid fever on various media and at different stages of the disease. His work shows that great dilutions of blood are not essential and that a number of media will give good results, notably 2% glucose bouillon, 2% glucose agar and ammonium oxalate solution. The bile media are not considered to offer advantages over these. The results of the cultures in general agree with those of other authors and will illustrate the frequent occurrence of positive growth before the appearance of the Widal reaction.

6. Williams considers that the tabetic process differs only in locality from the paralytic process, but rejects the explanation familiar in the textbook that it is a primary dystrophy or atrophy directly caused by alcohol, syphilis or sexual excess. Citing the work of Nageotte, he shows by microscopic sections taken from 11 cases how the lesions are encountered in all stages from simple round-cell infiltration, a meningitis possibly syphilitic, through granuloma to necrosis and cavity formation. Nageotte believes the effect upon the nerve roots to be toxic. Williams, on the other hand, attributes them to pressure produced by the lesions mentioned above. The reason why the fibers of deep sensibility are chiefly impaired, he is unable to explain; he believes that other anomalies of sensation are present more frequently than they are recognized. The permanent impairment of posterior root fibers is attributed to the fact that they are without neurilemma between their ganglion and the spinal cord and are, therefore, more susceptible to injury and less able to regenerate.

8. Adler summarizes the extensive literature upon the production of arteriosclerosis in rabbits first by adrenalin and later by numerous other drugs. He shows, however, that the results are not at all constant, and that many rabbits never subjected to these procedures show similar lesions. It is further questioned whether the lesions present in the experimental animals bear any relation to human arteriosclerosis. A brief description is given of what is known of arteriosclerosis and its causes in man, especial stress being laid upon heredity and physical overstrain; infections and intoxications are considered as of probable etiologic importance.

9. Nicholson and Evans conclude that the uterine lochia is sterile in normal cases throughout the puerperium and that streptococci are never present within the cavum uteri without causing symptoms. Ascendance of the gonococcus is an event of comparative rarity.

[F. W. P.]

BULLETIN OF THE JOHNS HOPKINS HOSPITAL.

AUGUST, 1908.

1. MacCallum, W. G. *The Teaching of Pathological Physiology. III. Organs of Respiration.*
2. MacCallum, W. G., and Miller, R. T., Jr. *Right Meso-Jejunal Hernia.*
3. Meloy, C. R. *Abnormalities of the Pulmonary Blood-Vessels.*
4. Winternitz, M. C. *A Case of Sigmoid Kidney.*
5. Thornton, W. L., and Pratt, J. P. *The Relation of Bronchial Stenosis to Bronchiectasis.*
6. Evans, H. M. *On the Occurrence of Newly-Formed Lymphatic Vessels in Malignant Growths. With a Demonstration of their Origin and Ingrowth in the Metastases of a Round-Celled Sarcoma.*
7. *Dochez, A. R. *A Preliminary Report upon the Effects of Feeding Animals upon an Iodine-Free Diet.*
8. Winternitz, M. C. *Changes in the Pancreatic Ducts, and their Relation to Chronic Pancreatitis.*

7. Dochez fed 7 dogs on an iodine-free diet, chiefly hogs' brains and pig embryos with the thyroid excised. A piece of thyroid gland was excised in each case at the beginning of the experiment. Every dog but one showed that the colloid in the thyroid was more abundant at the end of the feeding. With the increase in the amount of colloid, several of the glands showed a rather high iodine content despite the small amount of iodine contained in the food. All the animals lost a great deal of weight and were very susceptible to intercurrent infections.

[R. I. L.]

ANNALS OF SURGERY.

AUGUST, 1908.

1. *Branham, J. H. *Tetany following Thyroidectomy cured by the Subcutaneous Injection of Parathyroid Emulsion.*
2. Flint, C. P. *Sinus of First Branchial Cleft.*
3. Dowd, C. N. *Technic of Early Operation for the Removal of Tubercular Cervical Lymph Nodes.*
4. *Stone, H. B. *Desmoid Tumors of the Abdominal Wall.*
5. MacLaren, A. *Note on Syphilis of the Liver.*
6. Hammond, L. J. *Primary Carcinoma of the Vermiform Appendix.*
7. Basham, D. W. *Hernia of the Appendix complicated with Appendicitis.*
8. *Hasbrouck, E. M. *Enormous Endotheliomatous Cyst of the Great Omentum.*
9. Royster, H. A. *The Inconsistencies of the Gauze Pack.*
10. *Eising, E. H. *Prevesical Abscess.*
11. *Hagner, F. R. *Symptomless Hematuria.*
12. Nicholson, C. M. *Cystic Degeneration of the Kidney.*
13. Ransohoff, J. *Venous Thrombosis and Hydrocele of the Inguinal Canal.*
14. Schachner, A. *Comparative Value of Various Measures for Relief of Prostatic Enlargement.*
15. *Alexander, S. *Contribution to the Surgery of the Prostate.*
16. *Stetten, De W. *Musculo-Spiral (Radial) Paralysis due to Dislocations of the Head of the Radius.*
17. Patterson, F. D. *Congenital Defect in the Ulna.*
18. *Mayo, C. H. *The Surgical Treatment of Bunion.*
19. Bryant, W. S. *A New Motor for Bone Surgery.*

1. Branham reports a case of thyroidectomy, with coincident unintentional removal of one parathyroid and parts of three others, in which marked tetany ensued eighty-eight hours after operation. Administration of thyroid extract and of fresh beef parathyroids by mouth produced no apparent effect, but subpectoral infusion of a parathyroid emulsion was followed by complete relief of the symptoms, which have not recurred, the patient being entirely well at the end of a year. The writer infers that the damaged parathyroids have resumed their normal activity. His communication suggests the important possibility of tiding over by this means a period of temporary post-operative tetany in cases where return of parathyroid function may be expected, and perhaps even of permanently counteracting deficient parathyroid action, on the analogy of thyroid extract in myxedema. It should seem that this agent were also deserving of trial in tetany from other than operative cause.

4. Under the denomination of desmoid tumors, Stone describes a group of "fibromata or fibro-sarcomata arising from the musculo-aponeurotic structures of the abdominal wall," characterized clinically by painless, slow growth and rare malignancy. Their preponderating frequency of occurrence in parous women, or in men after a blow, suggests a traumatic etiology. The possibility of malignant progress, and the difficulty of plastic repair after removal of large tumors, indicate early operation. Ledderhose and Pfeiffer have already collected from the literature 400 cases, to which the author adds 17, one from his own experience.

8. Hasbrouck reports a cystic endothelioma of the great omentum, and collects from the literature 19 other cases. Of the 20, 10 were in children, suggesting but not proving congenital origin. In adults, there is in the symptomatology nothing to make possible a more exact diagnosis than intra-abdominal cyst.

10. After an anatomic description of the space of Retzius, which he divides into a prefascial, a prevesical and a preperitoneal space, Eising reports a case of prevesical abscess, and from the literature collects, discusses and classifies others illustrating 7 clinical types of origin. There is a good bibliography of the subject.

11. Without offering any explanation, Hagner records 3 cases in which symptomless hematuria ceased permanently after ureteral catheterization. The coincidence is

interesting but gives no evidence of being more than fortuitous.

15. Alexander describes his operation for the cure of urethro-rectal fistula and his educative method of restoring "voluntary control of the urogenital sphincter" in cases of urinary incontinence following prostatectomy. In view of the discouraging and obstinate nature of these post-operative conditions, his suggestions for treatment seem rational and of value.

16. Stetten reports a case of musculo-spiral paralysis from dislocation of the head of the radius associated with fracture of the ulna, and collects from the literature 8 similar cases, constituting a distinct group of rare trauma with a definite clinical picture and symptom complex. For treatment he recommends, in early cases, bloodless reduction, with later nerve operation if function is not restored; in old cases, resection of the head of the radius, with simultaneous nerve-suture or repair if necessary. There are excellent skiagrams and illustrative anatomic plates.

18. In the treatment of bunion, Mayo recommends resection of the head of the first metatarsal and turning in the overlying bursa to make a new joint. [R. M. G.]

SURGERY, GYNECOLOGY, AND OBSTETRICS.

AUGUST, 1908.

1. *Lusk, W. C. *Excision of the Rectum for Cancer.*
2. Johnston, G. B. *Hermaphrodism. Report of a Case.*
3. *Grant, W. W. *Torsion of the Omentum. Report of a Case.*
4. *Fuller, W. *Intra-abdominal Rotation of the Great Omentum, unaccompanied with Hernia.*
5. Capps, J. A., and Lewis, D. D. *Some Observations on Pleural Reflexes.*
6. Echols, C. M. *Advantage of the Elastic Ligature in the Treatment of Certain Cases of Anal Fistula.*
7. Shoemaker, G. E. *A Case of Concealed Hemorrhage in Pregnancy, Contrasted with One of Extra-uterine Pregnancy.*
8. Bishop, E. S. *Are Gloves and Masks Advisable in Modern Surgery?*
9. *Buhlig, W. H., and Stowe, H. M. *Upon a Case of Toxemic Pernicious Vomiting of Pregnancy, with Total Nitrogen and Ammonia Estimations.*
10. v. Eiselsberg, A. Fr. *A Case of Linitis Plastica of the Stomach (Brinton) cured by Jejunostomy.*

1. On the basis of a case of cancer of the rectum, which was removed by combined abdominal and coccygeo-perineal operation, but later recurred, Lusk undertook an extensive anatomic study with a view of determining the possibility and developing the technic of a more radical procedure for the extirpation of malignant rectal neoplasm. The results of this study he presents in a series of plates, illustrating every step of the proposed operation, which is described in detail. He compares cancer of the rectum pathologically with cancer of the uterus, discusses different operations that have been done for each, and tabulates the mortality and end results of various methods. He concludes that theoretically the operation of choice is wide radical excision of the rectum, and (in the female) of the uterus and part of the vagina, *en masse*, above the pelvic floor, with removal of the regional glands, entirely by the abdominal route; but for cases in which this is impracticable, he suggests modified procedures with combined abdominal and retrorectal approach. His paper, with its extensive bibliography, seems a valuable contribution to the surgery of the rectum, and the illustrative anatomic plates are particularly admirable.

3 and 4. After reviewing the embryology, anatomy and physiology of the great omentum, Fuller discusses the subject of intra-abdominal omental torsion, collecting from the literature 9 previously reported cases, to which he adds another of his own observation. Grant also reports a case. None of these was correctly diagnosed before operation, the acute onset with pain and emesis generally simulating appendicitis. Though torsion of the omentum is usually associated with hernia, there is this group of rare cases which Fuller believes are produced by other etiologic factors, — fixation of the omentum at some peripheral point by inflammatory process, with subsequent pedunculation of the adherent mass from traction, and finally rotation on the axis of the pedicle from violent physical exertion or perhaps from normal movements of the omentum.

9. In a case of typical toxemic pernicious vomiting of pregnancy, Buhlig and Stowe found the ammonia nitrogen in the urine to be 8.6% of the total nitrogen, essentially the normal ratio. They record this observation as a contribution to the study of the importance of ammonia nitrogen determinations in metabolic toxic conditions of pregnancy. [R. M. G.]

THE LANCET.

AUG. 15, 1908.

1. Duckworth, D. (Sir) *Clinical Lecture on the Opium Habit and Morphinism.*
2. Dunn, H. P. *Post-Graduate Lecture on Traumatic Enophthalmos.*
3. *Marshall, D. G., and Gulland, G. L. *Case of Kala-azar.*
4. Morris, H. *Malignant Disease of the Stomach associated with Malignant Disease of the Glands Above and Behind the Inner Extremity of Each Clavicle.*
5. Shattock, S. G., and Dudgeon, L. S. *Observations made upon the Phagocytosis occurring in Human Blood Serum when mixed in Vitro with Horse Serum.*
6. Upcott, H. *Excision of the Tonsil; Its Operative Technic.*
7. Smith, H. *Treatment of Immature Cataract.*
8. Lediard, H. A., and Templeton, W. *Renal Calculi; Nephrolithotomy; Subsequent Nephrectomy on Account of Hemorrhage.*
9. Lassalle, C. F. *Note on a Case of Vesical Calculus the Nucleus of which was a Revolver Bullet.*
10. Paterson, P. *Treatment of Spina Bifida by Drainage of the Cerebral Subdural Space.*
11. West, L. F. *Digest of Midwifery Note Book — 1858–1891.*

3. Marshall and Gulland describe a very interesting case of kala-azar. They speak briefly of the history of this condition, describe the parasite, and then give in detail the clinical history, blood examination and post-mortem findings in a case which occurred under their observation. [J. B. H.]

AUG. 22, 1908.

1. Warrington, W. B. *Clinical Lecture on Granular Kidney.*
2. Morton, C. A. *Clinical Lecture on a Case of Gigantic Retro-peritoneal Tumor, Intimately Connected with the Kidney, which simulated Ascites from Tuberculous Peritonitis.*
3. Smith, G. E. *Alleged Discovery of Syphilis in Prehistoric Egyptians.*
4. *Watt, E. *Digest of Eighty-Six Cases of Epidemic Cerebrospinal Meningitis admitted to the Middle Ward Hospital, Motherwell, in 1907.*
5. *Oliver, J. *Thirty-five Consecutive Cases of Extra-Uterine Pregnancy dealt with by Abdominal Section without a Death.*
6. King, W. W. *Generalized Edema of the Fetus.*
7. Richards, O. *Case of Double Abdominal Hydrocele.*
8. Clowes, N. B. *Case of Congenital Hypertrophic Stenosis of the Pylorus Treated Medically.*
9. Hirsch, C. T. W. *Motoring Notes.*

4. Watt gives a digest of 86 cases of cerebrospinal meningitis. He discusses the symptoms of these cases and the cause of the disease. Special treatment in the form of various sera was tried in 49 of the acute cases, which was given subcutaneously and intradurally. The percentage of recoveries was no greater with the serum than without it. Of those who recovered, deafness occurred in 4 cases, and in 2 there was a spastic paresis of the lower extremities. Besides the serum treatment lumbar puncture was used in every case.

5. Oliver describes 35 consecutive cases of extra-uterine pregnancy dealt with by abdominal section without a death. The majority of these cases were operated on very early in the course of pregnancy. He emphasizes the fact that it is possible for an extra-uterine pregnancy to run its course of nine months without a symptom different from that of a normal pregnancy. [J. B. H.]

British Medical Journal.

Aug. 1, 1908.

SEVENTY-SIXTH ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION.

1. Snell, S. *President's Address.*
2. Fowler, J. K. *Address in Medicine. Modern Medicine.* (Reviewed in *Lancet* of Aug. 1, 1908.)
3. Smith, R. J. P. *Address in Surgery. Prophylaxis in Surgery.*

Aug. 8, 1908.

1. Harris, W. *Address on the Treatment of Some of the Severer Forms of Headache.*
2. *Gordon, W. *The Value of Diminished Cardiac Dullness in the Diagnosis of Cancer.*
3. Crowe, G. W., and Wynn, W. H. *Case of Streptococcic Puerperal Infection treated with a Vaccine.*
4. Butler, T. H. *The Dangers of Calmette's Ophthalmo-Reaction.*
5. Douglas, C. C. *The Training of Teachers in Personal and School Hygiene.*

2. Gordon gives a study of 97 cases which either had cancer or were suggestive of this condition. In regard to the question of diminished cardiac dullness in the diagnosis of cancer, he does not attempt an explanation other than that, on account of the accompanying anemia and poor nutrition, the heart muscle diminishes in size. He draws no definite conclusion except that in certain cases of cancer the cardiac area is distinctly decreased. As a physical sign, this seems rather too uncertain to be much relied on at present. [J. B. H.]

Aug. 15, 1908.

1. *Poynton, F. J. *Clinical Lecture on Pyopericardium in Children under Twelve Years of Age.*
2. *Dunlop, G. H. M. *Some Considerations regarding Pneumonia in Children. (Drawn from an Analysis of Five Hundred Cases.)*
3. Speirs, H. *Physiological Antagonism between Aconite and Belladonna.*
4. Alcock, N. H. *New Apparatus for Chloroform Anesthesia.*
5. Fenwick, P. C. *Zinc Ionization in Chronic Urethritis.*

SEVENTY-SIXTH ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION AT SHEFFIELD.

Section on Physiology.

6. Mann, G. *Discussion on the Scientific Education of the Medical Student.*

Section of Navy, Army and Ambulance.

7. MacPherson, W. G. *The Transport of Sick and Wounded by Railway.*
8. De La Ferte, C. H. J. *The Indian Subordinate Medical Department.*
9. Wrench, E. M. *Lessons from the Past.*
10. Twiss, G. E. *Military Home Hospitals Reserve.*
11. Lambkin, F. J. *Treatment of Syphilis by Arylarsonates.*
12. Mummery, N. H. *Prophylaxis Applied to Venereal Diseases in the Navy Afloat.*
13. Probyn, P. J. *Oral Sepsis in the Services.*
14. Johnston, H. H. *Prevention of Malaria among the Troops at Singapore.*

1. Poynton gives an interesting article on pyopericardium in children under twelve years of age. This condition is almost universally associated with pulmonary disease and is usually pneumococcal in origin. Out of 100 fatal cases 83% occurred before the fourth year, making it almost a disease of infancy. It is almost universally fatal. In only six of the 100 cases which he studied was the diagnosis of suppurative pericarditis made with certainty, and in only 2 of these was pericardial friction present. The most important signs are: (1) Progressive muffling of the heart sounds synchronous with enlargement of the cardiac area. (2) A rapid and extensive increase of the cardiac dullness upwards towards the left clavicle. (3) The pear-shaped outline of a distended pericardium. (4) The abrupt transition from the dullness of fluid to resonant lung tissue. (5) A wavy and diffuse pulsation to the left of the sternum. The most common errors in diagnosis are: First, through mistake of the half truth for the whole, i. e., to stop short at empyema, or pneumonia and empyema, and again to attribute the failure in recovery, the wasting and breathlessness, together with the signs in the lungs, to tuberculous pulmonary disease and the consequent toxemia.

2. Dunlop gives a general clinical article drawn from an analysis of 500 cases of pneumonia in children, discussing the clinical and pathologic findings, diagnosis and treatment. [J. B. H.]

Aug. 22, 1908.

1. Gamgee, A. *Are Yeast Extracts justifiable as Substitutes for Extract of Meat?*
2. *Barker, A. E. *Third Report on Clinical Experiences with Spinal Analgesia; with a Third Series of One Hundred Cases.*
3. Jones, F. W. *Some Lessons from Ancient Fractures.*
4. Smith, J. *Hyperpyrexia.*

SEVENTY-SIXTH ANNUAL MEETING OF BRITISH MEDICAL ASSOCIATION AT SHEFFIELD.

Section of Dental Surgery.

5. Harrison, F. *President's Address.*
6. Tilley, H. *Discussion on Antral Disease in Relation to Special and General Surgery.*
7. Guthrie, L. *Discussion on Teething and its Alleged Troubles.*
8. *Goadby, K. W. *Two Cases of Acute Pyorrhea Alveolaris treated by a Specific Vaccine.*

Section of Industrial Diseases.

9. *Scurfield, H. *Discussion on Diseases of the Lungs caused by Dust.*
10. *Johnston, C., and Bennett, S. R. *Dust Removal in the Grinding Trades.*
11. Scott, A. *Discussion on the Notification of Industrial Diseases.*
12. Shufflebotham, F. *Industrial Dermatitis.*
13. Oliver, T. *Tar and Asphalt Workers' Epithelioma and Chimney-Sweep's Cancer.*
14. Carozzi, L. (Prof.) *An International Committee on Industrial Disease.*
15. White, R. P. *Preliminary Observations on a Fatal Case of So-Called Aniline Poisoning.*

Section of Physiology.

16. Leathes, J. B. *Discussion upon the Physiology of Purin Metabolism.*
17. Hill, L., Flack, M., and Just, T. H. *Influence of Oxygen Inhalations on Athletes.*

2. Barker presents some further experiences with spinal analgesia based on 300 cases. In regard to the question as to how serious an operation can be done by this means of anesthesia, he describes one case of gangrene of the intestines in a woman practically moribund, from whom he removed nearly five feet of small intestine and anastomosed the healthy gut above and below, with a perfectly uneventful recovery. From his long experience he is inclined to advise beginners not to use the method in extremely debilitated patients for severe operations on the abdomen requiring high analgesia. His best results have been in operations below the umbilicus, and best of all on the pelvic organs. The head and shoulders should be kept well raised at all times throughout the operation and after, and all shifting or jerking of the patient should be prevented. In practically all of his cases he has used stovaine. In 12 cases he used tropacocaine, which seemed to have a somewhat depressing effect.

8. In the Section of Dental Surgery of the British Medical Association, Goadby reports 2 cases of acute pyorrhea alveolaris treated by a specific vaccine. In each case the patient was extremely sick, with high temperature and rigor and all the signs and symptoms of an acute septicemia. Two points are particularly striking: first, the failure of the usual surgical method of treatment to reduce the persistent temperature, by removal of the local cause in extracting the teeth, and the persistence of local suppu-

ration after the removal of the teeth; and second, the immediate effect of the injection of the specific vaccine upon the temperature.

9. In the Section of Industrial Diseases of the British Medical Association, Scurfield presents statistics comparing the mortality in dusty trades in Sheffield with that of England, showing the very much larger mortality from all dusty trades in Sheffield.

10. Johnston discusses the etiology and prevention of pneumokoniosis. He describes the work done by Calmette, of Lille, Vansteenberghe and others, and describes in a general way what should be done to prevent the inhalation of dust. He also speaks of the pathology of grinders' phthisis in the various forms in which it occurs. [J. B. H.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT. NO. 33.

AUG. 18, 1908.

1. FIESSLER, A., AND IWASE, Y. *The Sterilization and Use of Rubber Gloves.*
2. *BINGEL, A. *Contribution to the Symptomatology and Bacteriology of Paratyphoid.*
3. TAEGE, K. *The Technic of the Wassermann-Neisser-Bruck Serum Diagnosis of Syphilis.*
4. WERKING, J. *Narcosis and Lecithin.* (*Preliminary Report.*)
5. KAESTLE, A. C. *Tests of Gastric Motility by Aid of the X-Rays.*
6. TAKATA, H. *A Modification of Kocher's Hernia Operation.*
7. NAST-KOLL, A. *The Operation of Inguinal and Femoral Hernia under Local Anesthesia.*
8. FRÄNKEL, T. *The Technic of Ambulatory Plaster Bandages.*
9. ZIEGENSPECK, R. *Slight Improvements over Schultze's Swinging Method for Resuscitation.*
10. DÖLGER, R. *The Treatment of Otitis Media with Boric Acid.*
11. HESSBERG, R. *Another Case of Ocular Affection from an Artificial Fertilizer.*
12. MACLEAN. *Cyst Formation from Remains of the Vermiform Appendix.*
13. VOGEL, K. *The Treatment of Cicatricial Contracture of the Hand.*

2. Bingel has recently been able to observe a series of about forty paratyphoid infections. As a rule the infection begins rather suddenly, with considerable fever, vomiting and diarrhea; the headache and malaise so common in typhoid are often absent. It is often impossible to retain any nourishment during the first few days. The general picture is one of severe gastro-enteritis. Very soon the temperature falls by lysis, and after a few days reaches normal. The pulse is higher than in typhoid, and the leucopenia is not so marked. The diazo reaction is usually not present in the urine. The spleen is slightly enlarged, but rose spots are very rare. Relapses occur but do not last over two days, and are not accompanied with much general discomfort. The prognosis is almost absolutely good, fatal cases being very rare. In all of Bingel's cases, paratyphoid bacilli were recovered from the stools, endoplates being used. The blood cultures are notably unsatisfactory, as the bacilli disappear very early from the blood stream. Though paratyphoid infections may simulate infections with the typhoid bacillus very closely, the usual picture is that of a severe gastroenteritis, such as is generally described as following meat or fish poisoning. [R. D.]

BERLINER KLINISCHE WOCHENSCHRIFT. NO. 33.

AUG. 17, 1908.

1. *STEFFENHAGEN, K. *The Relations between the Bacilli of Human and Bovine Tuberculosis.*
2. KLEBS, E. *Some Further Results of Researches as to the Etiology and Treatment of Tuberculosis.*
3. v. SCHMIEDEN. *Resections of the Elbow with Preservation of Mobility.*
4. GONTERMANN, C. *A Case of Abducens Paralysis after Lumbar Anesthesia with Tropacocain.*
5. STEIN, v. S. *Prosthetic Paraffine.*
6. DOERR, R., AND RAUBITSCHEK, H. *The Toxin and Anaphylactin of Eel Serum.*
7. TOGAMI. *The Action of Peroxides on the Digestive Organs.*
8. BARTH, E. *The Etiology and Treatment of Singer's Nodes.*
9. BIESALSKI. *The Outlines of Modern Care of Cripples.*

1. Cultures of the bacilli of human and bovine tuberculosis on blood serum show no macroscopic differences. The growths of the two organisms on the surface of glycerin bouillon are, however, distinctly different. The human type grows in three or four weeks to a thick, furrowed, nubbly layer which rises up onto the edges of the glass flask which holds it. The bovine type grows much more slowly, forming a thin paperlike layer on the surface of the medium. The two types of bacilli behave differently when inoculated in cows or rabbits. The bovine organism causes in cows a rapidly advancing generalized infection, while the human causes at most only rare lesions. In the rabbit, inoculations of the bacilli of bovine tuberculosis cause, after four or five weeks, a palpable hard swelling of the lymph glands, and usually death from generalized tuberculosis in three or four months. After inoculations with the human type of bacilli, no generalized process takes place, and no fatal infection is seen. After three or four months an abscess at the point of inoculation is usually found, with occasional small foci in the internal organs. The author has examined 140 cases of tuberculosis in human subjects, of which 21 were infections with the bovine type of bacillus, and 3 further cases were mixed infections of both human and bovine types. The majority of infections with the bovine bacillus were in children. In another series of 20 cases of primary tuberculosis of intestines and mesenteric glands in children, 7 were infections with the human type and 13 with the bovine. Further, in 16 cases of tuberculous glands of the neck in children, 10 were due to the human bacillus and 6 to the bovine. The bacillus of bovine tuberculosis, he believes, is more infectious for children than for adults and usually enters the system with the food. [R. D.]

REVUE DE CHIRURGIE.

AUGUST, 1908.

1. *CORNIL, V., AND COUDRAY, P. *Some Observations on Chondromata and Osteochondromata.*
2. *VALLAS, M., AND DESGOUTTES, L. *Tarsectomy with Preservation of the Calcaneum.*
3. MARTIN, J. *Plastic Utilization of the Uterus in the Cure of Genital Prolapse.*
4. VEYRASSAT. *Hour-Glass Stomach and Its Surgical Treatment.* (To be continued.)

1. Continuing the work of his late colleague, Cornil, Coudray publishes a succinct study of chondromata, describing them in definite clinical and pathogenetic groups. He reports, with elaborate histologic description, 4 unusual cases of complex osteochondromatous tumors, which he regards as probable derivatives from embryonic inclusions.

2. The writers record a case in which complete excision of the tarsus, with preservation of the calcaneum, was done for necrosis following septic extension of a postpuerperal phlebitis. The functional result was excellent. The authors describe their operative technic which they believe establishes a practicable conservative procedure of definite value in certain open traumata, in suppuration, rarely in tuberculosis, probably never in neoplasm. [R. M. G.]

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Obituary.

CHARLES HARRINGTON, M.D.

CHARLES HARRINGTON was born in Salem, Mass., July 29, 1856. A student for a time in Bowdoin College, he transferred himself to Harvard and was graduated there in 1878. He at once entered the Medical School at Harvard, and received the degree of M.D. in 1881. He continued his medical studies abroad, spending two years in the schools of Leipsic, Strasburg and Munich. In the last-named city he was brought into relations with Pettenkofer, the veteran leader in the modern school of sanitary science. Under this strong influence he probably received the impression which determined his future career.

Upon his return home, in 1883, he received the appointment of assistant in chemistry in the Harvard Medical School; in 1885, in addition to the position of assistant in chemistry, he was made instructor in hygiene and assistant professor of hygiene in 1898. He became a full professor in 1906. He became associated with the work of the State Board of Health in 1883, as assistant to the late Prof. E. S. Wood, who had charge of the Department of Chemistry under the Food and Drug Act of 1882. In 1889 he was made chief of the office of Inspection of Milk and Vinegar for the city of Boston. In this important position his work was characterized by thorough knowledge, efficiency and courage, and he survived the changes of political parties as only that public servant can who devotes himself with a high mind to the performance of his legitimate duties.

Dr. S. W. Abbott, the efficient secretary of the State Board of Health, died suddenly in October, 1904, and Dr. Harrington was in the same year elected to that office. Dr. Harrington had already earned a wide reputation, not only through the publication and records of his official work, but also through the best known of his publications, the book entitled "Practical Hygiene." The sterling worth of this was promptly recognized. It has already reached a fourth edition and is one of the most satisfactory manuals upon the subject which has been printed in any language.

Thus prepared and thus qualified, he found in his new place an ample field for his activities. Few persons, even in the medical profession, realize how important and varied have become the functions of the State Board of Health, created in 1869. The powers then bestowed upon it were largely advisory and the appropriations of money given to it were small, though sufficient for such duties as had been entrusted to it. In the course of years it has so far commended itself to the good will of the people that liberal appropriations have been freely made for such aid to the public welfare as no other community, in this country at least, enjoys; and the strenuous work of the executive officers of the board has been proportionately increased. With the latest legislation of consequence, that giving to the board the active assistance of the fifteen district health inspectors of the state, a consummation has been reached wherein is given to this state a complete sanitary system reaching from the smallest village to the largest city of the commonwealth, and yet so contrived that local powers and responsibilities have not been essentially diminished.

The so-called filth diseases of the earlier day have other and more complicated relations to the life that surrounds us than any which the sanitarians of the past generation imagined they had found in the appalling dirt and neglect which seemed to be not only the home but the proximate cause of epidemic disease. The discovery of the microscopic organisms peculiar to the various communicable diseases promised a greater relief than we in our subsequent experience have been able to procure. It was at first assumed that certain bacteria, for instance, gained entrance to the body, did their mischievous work and disappeared. We now know that this is not always so; the patient may, after recovery, still be the host, for a longer or shorter period, perhaps for life, of the organisms which are a menace to the health of the community, though not to him. Such questions as this, directly involved in the prevention of disease, must occupy the attention of the health officer of to-day. In addition to these are all the duties which usage and legislation have relegated to the health authorities — the care of public water supplies, the treatment of sewage, the disposal of wastes, the purity of foods and drugs, the protection of life in tenements and factories, the suggestion of useful legislation in relation to the public health.

We live in an age, fortunately, where there is conviction on all sides that something must be done to improve the conditions for healthful living; everywhere there is a waiting for authority to declare what shall be done. Knowledge and method and wide outlook are necessary and the clearly defined purposes of leaders who can establish principles and maintain them. To this much-needed class of sanitary authorities Dr. Charles Harrington belonged.

His friends knew that he was able and well qualified for the new work; not all of them were convinced that he possessed the patience which is so indispensable to the public servant who waits upon the will of a large legislative body. Any apprehensions that may have existed in this regard soon came to an end. He communicated much of his own enthusiasm to the committees with which he was brought into contact, and his warm advocacy of the plans of the board which he represented made and did not lose friends for the cause he had at heart. Together with a natural impetuosity of temperament he had the unusual concomitant of a well-ordered and most industrious habit of work. Few men in public service gave more time than he to the drudgery of an office, yet at the same time he was the efficient professor of an important department in the Medical School of Harvard College, and a committee worker whose attendance and attention to business could always be obtained.

He was a member of the various associations which have to do with hygiene in its many aspects. He was the chosen representative of his fellows in the public assemblages where questions of moment relative to the public health are discussed, and he was always a man of mark in such gatherings. The end of all these useful activities came too soon for one who seemed to have the assured prospect of many years of successful work in a field so well prepared.

RECORD OF MORTALITY

For the Week ending Saturday, Sept. 12, 1908.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	9	3
Chicago	556	239	Waltham	6	1
Philadelphia	445	136	Pittsfield	—	—
St. Louis	—	—	Gloucester	8	3
Baltimore	190	58	Brookline	6	1
Cleveland	—	—	North Adams	3	3
Buffalo	—	—	Chicopee	6	2
Pittsburg	—	—	Northampton	7	2
Cincinnati	—	—	Medford	3	—
Milwaukee	—	—	Beverly	5	1
Washington	—	—	Leominster	4	—
Providence	—	—	Hyde Park	1	1
Boston	223	104	Melrose	2	0
Worcester	44	16	Newburyport	—	—
Fall River	33	24	Woburn	2	—
Cambridge	27	[illegible]	Westfield	5	3
Lowell	43	26	Marlboro	1	0
Lynn	14	2	Revere	4	—
New Bedford	35	21	Attleboro	1	1
Springfield	21	4	Peabody	—	—
Lawrence	19	10	Adams	1	1
Somerville	20	6	Clinton	8	3
Brockton	11	4	Gardner	7	3
Holyoke	22	6	Milford	—	—
Malden	10	3	Watertown	—	—
Chelsea	4	3	Plymouth	—	—
Newton	5	—	Weymouth	6	4
Salem	—	—	Framingham	4	1
Haverhill	14	6	Southbridge	2	—
Fitchburg	—	—	Wakefield	—	—
Everett	7	5	Webster	—	—
Taunton	16	4	Arlington	—	—

OFFICIAL LIST OF CHANGES OF STATION AND DUTIES OF COMMISSIONED AND OTHER OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED SEPT. 9, 1908.

Bailhache, P. H., surgeon. Granted leave of absence for twenty days from Sept. 21, 1908.

Stoner, G. W., surgeon. Directed to proceed to Gowanda, Black Rock, Niagara Falls, N. Y., and Detroit, Mich., upon special temporary duty. Sept. 4, 1908.

Cobb, J. O., surgeon. Granted leave of absence for four days from Aug. 30, 1908.

Stimpson, W. G., surgeon. Granted leave of absence for ten days from Sept. 3, 1908.

Nydegger, J. A., passed assistant surgeon. Granted one day leave of absence. Sept. 5, 1908.

Clark, Taliaferro, passed assistant surgeon. Directed to proceed to Lebanon, Pa., for special temporary duty. Sept. 4, 1908.

Anderson, J. F., passed assistant surgeon. Directed to proceed to Arundel-on-the-Bay, Md., for special temporary duty. Sept. 4, 1908.

Ramus, Carl, passed assistant surgeon. Granted one day leave of absence on account of sickness. Aug. 25, 1908.

Korn, W. A., passed assistant surgeon. Granted three days' leave of absence from Sept. 15, 1908.

Long, J. D., passed assistant surgeon. Directed to proceed to Los Angeles, Cal., for special temporary duty. Sept. 9, 1908.

Guthrie, M. C., assistant surgeon. Granted leave of absence for one month from Oct. 1, 1908.

Fairbanks, G. D., acting assistant surgeon. Granted leave of absence for twenty days from Sept. 3, 1908.

Keatley, H. W., acting assistant surgeon. Granted leave of absence, on account of sickness for twenty-seven days from July 24, 1908.

Rodman, J. C., acting assistant surgeon. Granted leave of absence for two days from Sept. 3, 1908, under paragraph 191, Service Regulations.

Scott, J. T., acting assistant surgeon. Granted leave of absence for one month from Sept. 3, 1908.

Smith, Luther G., pharmacist. Assigned to station at Wilmington, N. C.

PROMOTION.

Pharmacist A. M. **Thomas** promoted to pharmacist of the second class. Sept. 3, 1908.

APPOINTMENTS.

Dr. M. L. **Volk** appointed an acting assistant surgeon for duty at Reedy Island Quarantine Station, Delaware. Sept. 2, 1908.

Luther G. Smith appointed a pharmacist of the third class. Sept. 2, 1908.

RESIGNATIONS.

Pharmacist W. H. **Keen** resigned, to take effect Aug. 27, 1908.

Pharmacist E. E. **Barnett** resigned, to take effect Aug. 31, 1908.

BOARD CONVENED.

A board of medical officers was convened to meet at the Bureau Sept. 8, 1908, to report on the examination of papers of an assistant surgeon for promotion. Assistant Surgeon-General J. W. Kerr, chairman; Passed Assistant Surgeon Jos. Goldberger, and Passed Assistant Surgeon J. W. Trask, recorder.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING SEPT. 19, 1908.

Old, E. H. H., assistant surgeon. Ordered to duty at the Naval Hospital, Norfolk, Va., Sept. 15. Sept. 11, 1908.

Dollard, H. L., assistant surgeon. Detached from the "Rhode Island" and ordered to the "Albatross." Sept. 11, 1908.

Hart, G. G., acting assistant surgeon. Detached from the "Albatross" and ordered home to wait orders. Sept. 11, 1908.

Marsteller, E. H., surgeon. Transferred to the retired list from Sept. 15, 1908, upon his own application, after completion of thirty years' service. In accordance with a provision of the Naval Appropriation Act of May 13, 1908, detached from the Naval Recruiting Station, Baltimore, Md., Sept. 15, 1908, and ordered home. Sept. 14, 1908.

Wells, H., medical director. Detached from the Naval Recruiting Station, New York, N. Y., and ordered to the Navy Yard, Portsmouth, N. H., and to additional duty in command at the Naval Hospital at that yard. Sept. 15, 1908.

Bogert, E. S., surgeon. Detached from the Naval War College, Newport, R. I., and ordered to the Naval Recruiting Station, New York, N. Y. Sept. 15, 1908.

Hoen, W. S., passed assistant surgeon. Detached from duty as assistant to the Inspector in charge of the Third Lighthouse District, Tompkinsville, N. Y., and ordered to the Naval Hospital, New York, N. Y., for treatment. Sept. 16, 1908.

May, H. A., passed assistant surgeon. Detached from the Naval Hospital, Norfolk, Va., and ordered to duty with lighthouse vessels en route to the Pacific coast. Sept. 16, 1908.

Reed, E. H., assistant surgeon. Detached from the Navy Yard, Mare Island, Cal., and ordered to the Naval Training Station, San Francisco, Cal. Sept. 16, 1908.

Murphy, J. A., surgeon. Ordered to temporary duty on board the "Franklin." Sept. 17, 1908.

McCormick, A. M. D., surgeon. Detached from the Naval Academy and ordered to the Naval Recruiting Station, Baltimore, Md. Sept. 17, 1908.

Bishop, D. W., passed assistant surgeon. Ordered to duty at the Naval Hospital, New York, N. Y. Sept. 17, 1908.

Forster, T. G., assistant surgeon. Detached from the Naval Training Station, Newport, R. I., and ordered to the Naval Hospital, Newport, R. I. Sept. 17, 1908.

MacKenzie, E. G., Sterne, C. F., assistant surgeons. Detached from the Naval Hospital, New York, N. Y., and ordered to course of instruction at the Naval Medical School, Washington, D. C., Oct. 1, 1908. Sept. 17, 1908.

Phelps, J. R., assistant surgeon. Detached from the Naval Hospital, Boston, Mass., and ordered to course of instruction at the Naval Medical School, Washington, D. C., Oct. 1, 1908. Sept. 17, 1908.

Henry, R. B., Giltner, H. A., assistant surgeons. Appointed assistant surgeons from Sept. 10, 1908. Sept. 17, 1908.

McMurdo, H. B., acting assistant surgeon. Detached from the Naval Training Station, San Francisco, Cal., and ordered to course of instruction at the Naval Medical School, Washington, D. C. Sept. 17, 1908.

Whitside, L. C., acting assistant surgeon. Detached from duty at the Naval Hospital, Newport, R. I., and ordered to course of instruction at the Naval Medical School, Washington, D. C., Oct. 1, 1908. Sept. 17, 1908.

RECENT DEATHS.

Frederick Hubbard Hooper, M.D., M.M.S.S., died in New Bedford, Aug. 31, 1908, aged seventy-eight years.

John Peaslie Brown, M.D., M.M.S.S., of Taunton, died in Springfield, Sept. 19, 1908, aged seventy-four years.

Dr **Alexander Wilder** died at his home in Newark, N. J., on Sept. 18, in the eighty-sixth year of his age. He was born in Verona, N. Y. In 1851 he was graduated from the College of Medicine, Syracuse University, N. Y., and later was a professor in that institution. After practising for some time he abandoned the medical profession and took up a literary career. For many years he was a legislative reporter and editorial writer for the New York *Evening Post*, and during this time he took an active interest in politics, serving for a number of terms in the New York City Common Council. He also devoted much attention to Biblical research, and is stated to have translated the Bible into six languages.

Original Articles.

ACUTE APPENDICITIS IN CHILDREN.

BY BETH VINCENT, M.D., BOSTON.

In the course of my work during the past four years as volunteer assistant surgeon to the general surgical service of the Children's Hospital of Boston, my attention was called to the frequency and relative importance of appendicitis in children. During this time more than 60% of all the laparotomies were performed for this disease. Furthermore, I was impressed with the fact that acute appendicitis in children often differs materially in certain of its essential features from acute appendicitis in adults.

This impression, drawn from the cases coming under my personal observation, has been strengthened by the study of one hundred of the most recently operated cases taken from the general surgical service. Interval cases were omitted. The series includes only those cases with acute symptoms in which an active process was found at operation.

The ages ranged from two to twelve years. Twenty of the cases occurred under five years, 60 from five to ten years, and 20 from ten to twelve years, the age limit of the hospital. Fifty-two of the cases occurred in boys and 48 in girls.

From a surgical point of view, children over ten years in age resemble adults very closely, and appendicitis between this age and puberty differs but little from the same disease in adolescence. Under ten years the influence of the child's lack of mental and physical development is apparent, and this gives rise to certain characteristics that are normal for a child, but which differ materially from an adult. The younger the child, the more marked are these characteristics or peculiarities.

The purpose of the study of this series of cases was, first, to find out how these characteristics peculiar to children influence the forms of acute appendicitis as it occurs in children, the course of the disease, its signs and symptoms; and, second, to determine what adult methods of operation and treatment should be adopted or how they should be modified to suit the altered conditions that are found in children.

MORPHOLOGY.

In the 100 cases, perforation or gangrene was found in 71%. The resulting peritonitis was of limited extent in 25 cases, but apparently spreading at the time of operation. In 42 cases the peritonitis had become a localized process that varied from the palpable, firmly-walled abscess to the case which had a small amount of pus limited by light but efficient adhesions. The disease was confined to the appendix in 24 of the cases. Nine could be called instances of diffuse or general peritonitis.

All the adult forms of appendicitis are seen in children, the catarrhal, the gangrenous, the perforative, the suppurative, where the infection is either altogether within the appendix or where the peritoneum has become involved with the formation of a circumscribed abscess, a spreading, or a diffuse peritonitis. The advanced and severe forms, however, are more frequently met with in children, gangrene and perforation being especially common. The catarrhal form and the suppurative form, where the disease is confined to the appendix, — empyema of the appendix, — are, unfortunately, not so often found at operation as in adults.

This peculiarity of children may be accounted for in two ways: first, because the difficulties of early diagnosis lead to a tardy recognition of the disease and to delayed operation; and, second, because the progress of this disease is unusually rapid in the child. The reason for this rapid progress some writers [1] believe is due to the abundance of lymphoid tissue that exists in a child's appendix. A septic process flourishes in this tissue, as, for example, is seen in the child's throat, which is also rich in lymph follicles and where tonsillitis and adenitis so frequently end in suppuration.

Light attacks of appendicitis are readily overlooked. The early stages of the more severe attacks seem to be of short duration in a child. The process tends to extend quickly to the peritoneum, and the appearance of pus is an early feature. This extension is usually followed by abscess formation because the child's peritoneum, up to a certain point, is capable of prompt resistance; hence in children one finds a large number of cases of circumscribed peritonitis. If the average time of operation were as early in children as in adults, probably the percentage of these localized cases would be even greater in children.

This tendency of the disease to insidious and rapid progress naturally increases the frequency of diffuse peritonitis, but hardly to the extent estimated by some writers. Spieler,[2] for example, reports 27 operated cases with 23 instances of perforation and gangrene, 16 of which resulted in diffuse peritonitis. Selter [3] quotes Sonnenburg and others as observing diffuse peritonitis in more than one half the cases. While diffuse peritonitis from appendicitis is undoubtedly more common in children than in adults, the increased frequency in children is due more to late operation or to the operation itself than to an inherent tendency of acute appendicitis to assume the diffuse form in a child.

THE ATTACK AND SYMPTOMS.

In an adult an accurate history is of great value, not only in making an early diagnosis, but, once the diagnosis is established, in estimating the stage of the disease and the activity of the process. In a child the story of the illness must frequently be obtained from some older person, usually one of the parents. In an infant this history comes altogether from a second person. Even children of ten and twelve years of age are often characteristically vague and indefinite in describing their symptoms. They refer the pain to the epigastrium, the umbilicus or to the whole abdomen. They are unable to define the character of the pain, or to say whether it differs from that of ordinary colic, a point on which an adult is often very emphatic. No dependence can be placed on their statement as to whether the pain is increasing or subsiding. This lack of accurate data hampers the doctor in making an early diagnosis in a child. In these days the laity has become so familiar with appendicitis that apprehension makes them not only faithful observers, but prompts them to call a doctor early. Sick children, however, are frequently full of fear but are never apprehensive. They are only concerned with the degree of discomfort or pain and never worry about what it portends. Therefore, a child may ignore the sense of distention and abdominal distress which often precedes the advent of the actual pain. For these reasons the beginning of the attack may escape the attention of parents or physician and thus give rise to the impression that the onset in children is apt to be more abrupt than in adults. The mother may have noticed that the child did not seem well for a short time before the acute attack, but frequently the first warning is given when the child wakes up at night or comes home from school crying because of a stomach-ache. Vomiting does not relieve the pain, and the parent, often ascribing the distress to indigestion, gives a dose of castor oil. The active peristalsis which follows tends to aggravate rather than to quiet the process.

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[1] Selter: Arch. für Kinderheilkunde, 1901, xxxi, 59.

[2] Wien. Klin. Wochenschr., 1904, xvii, 1.

[2] Arch. für Kinderheilkunde, 1901, xxxi, 59.

Attacks of appendicitis in children may show a period of remission and apparent improvement on the second day. The stomach being empty, the vomiting ceases and the child is more comfortable. But, after a short respite, the pain grows worse and the child begins to vomit again. The parents now realize the seriousness of the illness and the doctor is often first called to see the case at this stage of the attack.

The onset of the pain is almost invariably accompanied by vomiting, for children vomit very easily. This fact detracts from the positive, but adds to the negative, value of this symptom. Nausea and vomiting, when present in a child, are not so significant as in an adult, but a surgeon may wisely hesitate to open the abdomen of a child for acute appendicitis when there has been no vomiting, even though the other facts and findings are suggestive of the disease.

The acute attack may be associated with diarrhea or constipation. Mr. Dunn [4] points out the frequency of diarrhea in children and also the number of cases that have bladder symptoms.

In this series of 100 cases looseness of the bowels was a prominent symptom in several, and 5 complained of frequent and painful micturition. The high position of the bladder in the young may account for this peculiarity in children. These symptoms occurred more often in the younger children, and particularly in those cases that had involvement of the pelvis. Perhaps the number of cases with bladder symptoms might have been larger had this point been given closer inquiry.

With the same pathological conditions in the abdomen, the temperature, pulse and respiration are apt to range higher in a child than in an adult. Unless this fact is borne in mind one is likely to get an exaggerated idea of the seriousness of the case if conclusions are drawn from the adult standard. The pulse and respirations are perhaps more deceptive in this respect than the temperature; this is especially true in children under five years of age. A case of gangrene or perforation with a localized process might show respiration and pulse so quickened that, in an adult, one would suspect general peritonititis. It is wise, therefore, in children to expect an elevated temperature, a rapid pulse and quickened respiration in making a diagnosis of acute appendicitis, but to discount them a little in estimating the severity of the attack.

THE EXAMINATION AND PHYSICAL SIGNS.

The lack of an accurate history and the inability to get intelligent answers from a child greatly increases the importance of the physical examination. The surgeon must often make the diagnosis and determine the advisability of operation entirely on the abdominal examination. Palpation of the abdomen, thus doubly important, is at times very difficult in children and its value in an individual case depends upon the skill of the surgeon in dealing with the child. Doctors are often handicapped by their methods and by the surroundings. If possible let the child be undressed and in bed. In a hospital more can be learned when the child has rested in the ward an hour or so after entrance. The physician's manner should be quiet and natural. Avoid sudden rough movements, for once the patient is startled or frightened no amount of reasoning or scolding will restore quiet or confidence. The pulse should be counted while the child is asleep or before it is disturbed by an examination. It is best to palpate the abdomen first, as the findings here are of the most importance. Do not waste a period of quiet by going over the chest. The rectum should always be explored at the end of the examination. This procedure has no ill effects even in an infant and a surprising extent of the abdominal cavity can be reached by the finger in this way. A rectal examination may not have the same differential diagnostic value as in an adult, and while it does not always establish the diagnosis of appendicitis in a child, it may locate the seat of the trouble and hence save time in the operation. The surgeon can work more rapidly, lessen manipulation and avoid breaking up protective adhesions if he starts with some idea as to the position of the appendix.

If the physical examination in children is at times more difficult, in some instances it is easier than in adults. The abdominal walls are thinner and a mass is more readily palpated. The rarity of other acute conditions in a child's abdomen narrows the field of possibilities.

As signs, rigidity and local tenderness are of about equal value. When both signs are present, the diagnosis is clear; but under certain circumstances the surgeon may miss them altogether, or be led astray as to the gravity of the attack because these signs are rather light in character. In older children who are not frightened, the degree of tenderness is apt to be deceptive. Imagination often magnifies this sign in an apprehensive adult, and the lack of imagination may have the opposite effect in children. Possibly the child is actually less sensitive to pain, for certainly at times it requires rather vigorous pressure to elicit any tenderness.

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[4] Glasgow Med. Jour., 1905, lxiii, 410.

Children under five years of age, or any frightened child, usually resist the most careful handling. In these cases the physician gains nothing by temporizing but must push on with his examination and learn as much as possible in the face of difficulties. It is not easy to palpate the abdomen of a child in pain, thoroughly frightened, sobbing, gasping and rolling about in the bed. All signs are obscured by the tension of the whole abdomen. Rigidity is valueless unless it can be differentiated from the voluntary spasm. This can be done by taking advantage of the relaxation of the muscles which comes in the moments of deep inspiration. Pressure when made evenly on either side of the abdomen, in the brief interval between the cries of the child, will often reveal the persistence of involuntary spasm of the protecting muscles. At times just the suggestion of a mass can be made out in this way. In difficult cases the local spasm demonstrated by this method may be the only sign of which the surgeon can be certain. In a child of two years of age recently operated on by the writer at the hospital, palpation of the abdomen was particularly unsatisfactory on account of the constant crying, but the question of operating was settled by this persistent right-sided rigidity, made plainly evident during every deep inspiration. The appendix was retro-cecal, it had perforated and there was a small abscess.

Abdominal distention is not so often present in a child as in an adult, perhaps because constipation is less common. When it is found, it should be regarded as an unfavorable sign, for it probably indicates something more than a local process.

The white count, in children as in adults, is of confirmatory value. At times it is reassuring to have the white count support the rest of the evidence, but it cannot be given even the weight it deserves in the adult because children are known to have a rather higher count under normal conditions. Most of the frankly suppurative cases of this series showed a leucocytosis of from 20,000 to 30,000, but in some instances where there was no pus the count was almost as high. One case of diffuse peritonitis gave a low white count.

Many writers have commented on the importance of the general appearance of the child. It is true that the drawn expression, the hollow eyes with dark shadows, etc., are unmistakable, but unfortunately they are significant of a grave abdominal condition and must not be looked for or expected by the surgeon who wishes to make an early diagnosis and operate at a favorable time.

On the other hand, one should not be deceived by the apparent health and unconcern of the patient. Children who have a very bad appendix may be found sitting up in bed with no visible discomfort, and the surgeon will not infrequently be unpleasantly surprised upon opening the abdomen to find a worse appendix than the physical signs seemed to indicate.

OPERATION.

In many respects the operation for acute appendicitis is easier in the child than in the adult. The abdominal wall is thinner, the muscles are not so powerful and relaxation under the anesthetic is readily secured. The appendix is usually more accessible because the distance is not so great from the skin surface to the bottom of the iliac fossa, the pelvis or the region of the kidney. On the other hand, the parts are small and delicate and must be gently handled. A surgeon should be careful but not too deliberate, for he must always remember that the time at his disposal is definitely limited in operating on children; the younger and sicker the child, the shorter should be the time of operation. Children stand operation very well up to a certain point; if the patient leaves the table prior to this, recovery is prompt, perhaps more so than in an adult. But once this point is passed and the child begins to show the effects of the operation, the change in condition is very rapid. This important period, that might be called the margin of safety, is the interval between that stage of the operation when a change in condition is first noted and the time when the patient is seriously affected by the strain of the operation; this period is much narrower in children than in adults and once it is exceeded and the child is in shock, it is very disturbing to find how little recuperative power exists. This lack of resistance makes it wiser to stop, if possible, short of this danger zone. This is especially true when operating on a case of appendicitis with abscess where it is optional with the surgeon whether he simply drain the abscess or prolong the operation in searching for the appendix. When dealing with a gangrenous or perforated appendix the indications are plainly to remove the offending organ and institute effective drainage in the shortest possible time.

Stimulants should seldom be resorted to on the table. Ether is sufficiently sustaining for an operation of the proper length. A case of appendicitis in such a critical condition as to require more is best treated by a very short operation. In such cases the surgeon should aim to do quickly the least that is needed and get the child back to bed as soon as is possible.

Children take ether very well. Usually for an appendectomy no difficulty is experienced if the anesthetic is skillfully given. Over-etherization should not be added to the shock of the operation, but time may be wasted in working in an abdomen not fully relaxed.

Oddly enough infants are sometimes the most difficult cases to etherize satisfactorily. The excursion of the abdominal walls during respiration is very marked in young children, and the bowels are constantly being forced into the field of operation if the child is too lightly anesthetized. On the other hand, a baby is easily over-etherized, and the narrow margin between the two conditions often leaves the surgeon struggling with a patient in one or the other extreme and never in a proper state of relaxation during the whole operation.

The operator should not restrict himself to a single kind of incision, but should select the one best adapted to the particular case. The McBurney incision, for instance, gives the best approach to an abscess near the anterior superior spine or in the flank. The writer believes that the rectus incision, at the outer border of the muscle, or between its fibers, if the case is to be drained, will give the easiest access in the largest number of cases. For simple cases it serves as well as the McBurney, and for a high or low appendix the vertical incision can be more readily extended. The incision can well be made with its mid-point lower than is generally recommended. The appendix is often found below McBurney's line, and in any case the operator should endeavor to bring the upper half of the incision rather than its mid-point over the base of the appendix, because the appendix is thus delivered at the upper not the lower angle of the wound, which makes it easier to reach the tip and gives more room to tie off the mesentery.

The incision should be long enough to insure rapid work, yet, from the fact that the appendix is within easier reach, even when the abdomen is freely opened, the wound will prove to be proportionately smaller than in an adult. Drainage wicks should be of such size and number as to make certain the outcome of the case without regard to a possible hernia. The tone of a child's muscles is so good that, even in the freely drained cases, there is apparently less likelihood of post-operative hernia than in an adult.

The shortest and simplest methods are to be used when working with children. Modified by this broad principle the technic is substantially the same as in the adult. The primary object of an operation for acute appendicitis, that is, to secure recovery from the present attack, should always be kept in view. In some cases the appendix is readily found and easily removed; in others obstinate persistence in the search may result in an unnecessary death. Fatal cases of this latter type die from the shock of a long, hard operation or of a diffuse peritonitis due to an infection that is released at the time of operation by breaking up the protecting adhesions. No operator is so experienced but that he will recognize that there are times when he should be contented to simply drain an abscess without searching for the appendix. At the same time it is only exceptionally that a skillful surgeon must retire with an operation half done. The important point to remember is that the cases in which it is wiser to drain the abscess and leave the appendix, even though a secondary operation may be necessary, are more common in children than in adults.

Cases of gangrenous or perforative peritonitis which reveal free pus as soon as the abdomen is opened furnish a type in which, perhaps more than in any other, the outcome of the case depends upon the skill and judgment of the operator. In these cases the protecting adhesions are very light or absent. The amount of pus may not be large, but it is apparently free in that part of the abdominal cavity, the right side, which is exposed by the incision. Strips of gauze placed in the pelvis come away soaked with foul fluid. The all-important question then arises, Is this condition general in the abdominal cavity? Will free pus be found beyond the median line, and how far should the investigation be carried to settle this question? Unless the signs of a widespread infection are obvious the writer believes that the best results are obtained by treating such a case as one of an unconfined, perhaps spreading, but as yet not general peritonitis. This conservative attitude may result in a failure to demonstrate some cases of general peritonitis, but, on the other hand, a few border-line cases will escape being converted into the more serious condition by a too vigorous exploration.

The appendix, the source of the infection, should first be looked for and removed. The exudate should be taken up by gauze sponges with the least manipulation and alteration of the intestinal coils. Wicks, gauze or cigarette, placed down to the stump and toward the flank, should be kept to the outer side of the intestines when possible in order to diminish the chances of post-operative obstruction. The pelvis should be drained by a tube or a long cigarette wick. Washing, except in skilled hands, is dangerous in these cases, for, while effective in removing a part of the pus, it may very likely carry the infection into uncontaminated parts of the abdominal cavity.

Cases of diffuse or general peritonitis are usually recognized by the appearance of the child, by the characteristic abdominal signs or by the amount of free fluid found at operation and the way it seems to well up from all parts of the peritoneal cavity. In these cases the operation must be very short. The intestines should not be handled unnecessarily or allowed to escape from the abdomen, as this greatly increases the shock. Salt solution may be used or not according to the inclination of the surgeon. A few of these desperate cases are saved if the operator limits his efforts to removing the appendix and draining the appendix region, the flanks and the pelvis by gauze or tube through additional incisions low in the median line or in the left semilunaris. In bed, the patient is placed in the Fowler's position and large quantities of salt solution are given either by frequent enemata or by Murphy's seeping method.

POST-OPERATIVE TREATMENT.

Children are not likely to show the decided and satisfactory drop in pulse and temperature usually seen in adults the evening of the day of the operation. The pulse and temperature may be even higher than before operation, and the elevation may be maintained on the morning of the next day, but after this their trend should be steadily downward if the case is to progress in a proper manner. Single irregularities in the temperature chart during convalescence do not possess the same significance as in an adult. The temperature-controlling mechanism of a child is more delicate and easily disturbed; pulse and respiration are also very unstable, particularly in young children. In general, it may be said that wide but brief variations in these signs are often produced by trifling and at times unexplainable causes, so that only a sustained temperature or a persistent increase in pulse and respiration is to be regarded as significant of some unfavorable development during the convalescence.

Regulation of the diet and care of the bowels follow about the same lines as in the adult. Nourishment should be given in some form as soon as possible, as children quickly show the effects of starvation. They take milk well, but this is more apt to cause distention than albumen water and broths. Children seem to suffer more from thirst than from pain after an operation. Water can be taken by mouth as soon as it does not cause nausea. Salt solution per rectum should be given every four hours in 4, 6 or 8 oz. amounts for the first twenty-four hours at least. Children readily assimilate nourishment by rectum if it is given in amounts proportionate to their size. The toleration to rectal feeding is prolonged if the quantity is reduced to one half the adult nutrient enema or even less in very young children.

The bowels are moved by enema the day after the operation and this, if successful, is followed by some cathartic, such as calomel gr. 1, in divided doses, on the second day.

The control of post-operative pain is not so much of a problem as in the adult. Children are either actually less sensitive to pain and discomfort or else they are able to endure them in a really remarkable way. Perhaps we take advantage of their helplessness and withhold morphia because it is best at times when we would be unable to refuse the more insistent demands of an adult. Whatever may be the reason it is not unusual to have cases convalesce with little or no morphia. When given the amount should be small, as the child's susceptibility to opium is well-known. For an infant under one year, gr. $\frac{1}{96}$ subcutaneously is sufficient; at two years, $\frac{1}{48}$, and at three, $\frac{1}{24}$; with older children doses of gr. $\frac{1}{16}$ and $\frac{1}{12}$ are used where gr. $\frac{1}{8}$ and $\frac{1}{6}$ would be given an adult. The morphia may be administered in the form of a suppository in the same or slightly larger doses. After the first twenty-four hours it should be replaced by other measures for a quieting effect.

Very sick children show their toxic condition by marked restlessness after operation. They wear themselves out with the loss of sleep and constant talking or crying and tossing about in the bed. Morphia not only does not relieve but sometimes seems to aggravate this condition. The bromides are often given with happy results. This drug is readily absorbed by rectum in full doses, 20–30 gr. for a child of four years, with the addition of a little chloral hydrate gr. 3–5 if needed. Finally, sponge baths in some cases will have the desired effect when all other measures fail.

The care of the wicks is essentially the same as in older persons. When correctly placed at the operation they need not be distributed until the fourth or fifth day, and if they are inclined to stick they may be left until the seventh or eighth day. In the meantime the outer gauze dressing is changed as often as indicated by the odor or amount of the discharge. An anesthetic is seldom necessary for the removal of the wicks if they are left in place until they come away easily, and the subsequent dressings, although often accompanied by struggling on the child's part, can, as a rule, be properly done without the aid of an anesthetic.

Aside from the condition termed acetonuria, common in its transitory form, but rare in the fatal type, the most serious post-operative complications are peritonitis and post-operative obstruction. The treatment is the same as in adults. Early recognition of the latter condition is, if possible, more imperative than in adults, for children go to pieces very rapidly under these circumstances. Secondary operations on these sick children are usually fatal.

PROGNOSIS.

In this series of 100 acute cases of appendicitis there was a mortality of 21%. Gangrene or perforation was found in 71%. In 24 of the cases the disease was confined to the appendix. Nine were cases of general peritonitis. In 25 cases the peritonitis was not yet general but spreading, and in 42 it was localized. Six of the 21 deaths occurred in cases where there was a walled-off abscess and a long search made for the appendix, which, in some instances, was not found. Eight of the 21 fatal cases were among the 20 children of five years or younger. There were two deaths in the 3 cases of two years. All but 15 of the 100 cases were drained.

In the series of 25 cases under two years of age collected by Kermisson[5] in 1906, 19 of the 25 came to a fatal termination. Of the 9 cases in the first year, all died and 7 came to operation. Of the remaining 17 cases in the second year, 10 died and 12 came to operation, with 5 deaths.

Aside from the two factors, time of operation and skill of the surgeon, which are of the first importance in adults and as much or more so in children, a third, the age of the patient, has an equal influence on the prognosis in children. In general, the younger the child, the worse the prognosis. Under ten years the peculiarities of children which increase the percentage of severe cases, the difficulties of diagnosis and the risks of operation begin to manifest themselves and become more marked in early childhood and infancy. The prognosis under five is distinctly worse than in children over ten years, and in the first and second year it is very poor indeed. In children over ten and approaching puberty the chances are as good as in the young adult.

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[5] Rev. de Chir., Par., 1906, xxxiv, 441.

One characteristic of the prognosis in young children is its uncertainty. Changes in condition come with greater rapidity than in adults. Even the most favorable cases may go wrong. On the other hand, occasionally a peritonitis which would surely be considered fatal in an older person in a child ends in a brilliant recovery. A child's strength and general resistance may be lower than an adult's, but the peritoneum seems capable of greater recuperative power. A child is seldom in such a desperate condition that a very brief incision for drainage is not justified. The prognosis may well be guarded in favorable cases, but even a widely diffused peritonitis is not always beyond all hope.

SUMMARY.

Acute appendicitis is rare in infancy but is more common in childhood than is generally supposed.

An early diagnosis is difficult and the first stages and lighter forms of the attack may be easily overlooked.

The prognosis of the disease is more rapid in children than in adults; the involvement of the peritoneum and the appearance of pus are early features; diffuse peritonitis is probably more frequent but there is still greater tendency to the formation of a localised abscess.

A child is never so young and seldom so sick as to contra-indicate surgical interference, but the extent of the operation must always be measured by the condition of each patient. Children stand short operations well but may be needlessly lost through prolonged and ill-advised efforts to do more than is absolutely essential.

The prognosis is more uncertain in children than in adults. Age is a very important factor. In children over ten years of age the prognosis is at least as good as in adults; in children under five years it is worse, and in infants the prognosis is exceedingly grave.

The writer is deeply indebted to Dr. Herbert L. Burrell for the privilege of reviewing these cases from his clinic in the Children's Hospital.

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MECHANICAL TREATMENT OF DISEASES OF THE CIRCULATORY SYSTEM WITH SPECIAL CONSIDERATION OF ZANDER METHODS.

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The treatment of internal diseases by physical exercises was much employed even in early times, but was reduced to a regular system only in the last century. The first to work out a complete system of massage and gymnastics was Ling, in Sweden. In the middle of the nineteenth century, Traube, in Germany, and Stokes, in England, recommended the treatment of diseases of the circulatory organs not only by rest and medicine, but also by exercises. When Zander constructed his apparatuses in Stockholm forty years ago, he was not only thinking of the treatment of diseased muscles and joints, but from the first had in view also the influencing of internal diseases, especially those of the circulatory system.

Later, Oertel, in Munich, recommended systematic mountain-climbing for the training of the heart, and in a series of cases was able to show such brilliant results that at various resorts, like Meran, Gries and others, the attempt was made, by suitable provision of promenades, to generalize his procedure and place it under the necessary control. A frequently unskilled judgment of indications, associated with lack of sufficient oversight, has brought "Oertel's cure" much into disrepute.

About the same time the brothers Schott, at Mannheim, constructed a system of manual gymnastics in connection with carbonic acid baths. This really had at bottom the principle of resistance-gymnastics which Ling had already carried out in a most able manner.

All these systems do good under the presupposition of a suitable determination of indications and careful supervision. It is not my purpose here to speak in favor of one or another system. I should like, however, in this paper to describe briefly the mechanotherapy of diseases of the circulatory system with special consideration of Zander methods, because I find that such treatment is hardly ever applied to these diseases here.

Let me preface my remarks with a few well-known physiological observations, in order to show the way in which we seek to influence the disturbances of the circulatory system; for even though a series of important physiological phenomena and pathological modifications are not fully explained, yet the circulatory organs afford many definite points of attack.

It is the blood-pressure, and still more the velocity of the blood-current, that we wish to influence. The blood-pressure indicates the relation of cardiac power and blood-volume to the peripheral resistances. These are furnished by the diminution of the lumen of the arteries, the resistance at their points of division and the friction of the blood in the vessels. The wider the arteries, the less the resistance which the blood finds in them. In active organs the arteries are dilated, probably by reflex influence. Therefore if we convey motor stimuli to a greater number of muscle groups, we can, under certain circumstances, lower the blood-pressure. Yet in practice this sort of influence can hardly be controlled, since the regulation of the variations of blood-pressure, from the cardiac side as well as the peripheral, is extremely complex. Let it suffice to point out that an increase of blood-pressure is generally not intended in our work.

Fortunately, we can, to a considerable degree, influence, by mechanotherapeutic methods, the velocity of the blood-current, the diminution of which is an essential factor of all diseases of the circulatory system. The velocity of the blood-current stands in direct relation to the functional capacity of the heart and of the peripheral factors. So far as the latter are concerned, we see a quantitatively and qualitatively very different effect during rest and exercise. The more the demands on the heart are increased by physical work, the more is fresh provision for support made peripherally by increase of the activity of the accessory forces, also operative during rest, and by use of other forces.

The first force which even in rest determines the current-velocity in the venous system is the force from behind. As in all parts of the vascular system, so also in the capillaries the elasticity of the vessels as well as of the surrounding tissue plays a large part in the current-velocity. Stasis in the venous system diminishes this elasticity by direct injury to the capillary walls and by accumulation of fluid. By this the blood-pressure is increased, or, what is the same thing, the *vis a tergo* diminished, and thereby, also, the velocity of the blood-stream.

The second factor always to be found acting is the aspiration of the blood by the negative pressure prevailing inside the thorax. To this is added further the suction of the heart itself during diastole. The longer the diastole, the greater will be the amount of blood aspirated.

For the standing or sitting body, the gravity of the blood flowing down from the head and neck plays an adjuvant part. In horizontal position this factor disappears, but in compensation the return flow of blood from the lower half of the body is facilitated.

The accumulation of carbon dioxide in the blood, increased during all active work, causes increased activity of the respiratory apparatus by stimulation of the center in the medulla oblongata. The inspirations become augmented and deepened, the amount of negative pressure rises, the aspiration of the blood ensues more vigorously. At the same time, however, is added the special influence of bodily movement and muscular activity.

The width of the main venous trunks in the extremities varies with various positions of the latter. For example, the abduction of the arm widens the brachial vein, the blood flows in more strongly and at subsequent adduction is driven out centripetally to a certain degree, since the valvular mechanism prescribes this direction.

A contracting muscle presses the blood out of the veins which traverse it and its immediate neighborhood in a centripetal direction. In subsequent relaxation the blood is again aspirated all the more strongly.

The activity of the smooth muscles of the intestine plays for the portal system a part not yet surely determined, but certainly important. I will speak of this point in another place.

I have gone somewhat closely into these physiological relations because they show us how to proceed if we wish to accomplish our task. I think I need not separately speak of the pathologic changes of the circulatory organs.

We cannot, as a rule, remove the causes of various diseases of the heart and circulatory system, but we can and must make the conditions for their functional capacity as favorable as possible. To this end there stand at our disposal the two agents which F. A. Hoffmann, in his excellent textbook of general therapy, calls the fundamental factors for the treatment of diseases of most organs, — rest and exercise. Rest is bringing the body into a situation so that it uses the diseased organ as little as possible; exercise, on the contrary, is intended to fit the organ to perform its work permanently better than before. These definitions are essential, since both ideas have here, as we shall see, a somewhat different sense than in the speech of everyday life.

I will illustrate this by an example. When we confront the problem of treating a disturbance of cardiac compensation, we shall endeavor to lighten the work for the heart as much as possible by rest in bed, withdrawal of fluids ("Karrell cure" or "Oertel cure") and establishment of the best possible hygienic condition, factors which naturally fall under the category of rest. At the same time we give digitalis, which augments the pulse-volume of the heart and reduces the frequency of the beat. In a certain sense, therefore, we are already dealing here with a sort of exercise.

If the condition of the cardiac muscle has not been too severely damaged by the primary cause of disease, and such cases defy every kind of therapy, we must now attempt so to strengthen the heart that it may be in as high degree as possible equal to the ordinary demands of life. Mere supplying of work would not lead to the goal; rather we must so regulate the exercises that, on the one hand, as motor stimuli, they may increasingly produce work, and, on the other, by promoting the velocity of the blood-current, may lighten the work for the heart. This we seek to attain by stimulating to increased practical activity the above-mentioned peripheral factors which promote the blood-flow.

In now going into the particulars of the method, I will, in accordance with the plan of the work, devote the largest space to the Zander method and later consider how far, according to the condition of the case, the other methods of Schott, Oertel and so forth may be employed in appropriate manner. It would take me too far here to discuss in detail the Zander apparatus; I must be contented with giving the outlines.

Among the Zander apparatuses, 34 serve the active movements of the individual muscle-groups. They are so constructed that a weight movable on a lever exerts a resistance whose minimum in most of the apparatus represents almost a condition of equilibrium. For example, in the apparatus very important for our purpose, which abducts the arms in horizontal attitude, position No. 1 (of the weight) is such that a minimal exertion of strength suffices to carry out the movement as well as to restore the arms to the starting point. The action expended is thereby even less than the same movement demands without apparatus, since the body is relieved of the fairly considerable effort of holding the arms in a horizontal position. But this slight exertion of strength is constantly sufficient, by muscular contraction and relaxation, to stimulate the circulation in the region concerned in the above explained sense. With higher position of the weight (we have 20 numbers at our disposal), the work for the muscle-groups to be influenced now increases in such a way that finally neighboring muscles must be brought into action. The demands on the antagonists are the greater the more slowly the return to the starting point is made. To that end, on the basis of careful mathematical computation, the weight of the lever is greatest in that position in which the contracting power of the muscle is greatest, which, for a normally movable knee-joint, for example, is the case at an angle of 120°.

We see, therefore, that these active apparatuses, or at least the greatest part of them, produce at the lowest position of the weight a sort of passive action, whereas, with higher position, they combine active and active-passive.

Certain passive motions are produced by mechanically-driven apparatuses. These are movements for the hands and feet, the pelvis, the trunk muscles and, above all, for the respiratory muscles. The so-called breathing chair is for our purpose the most important apparatus; we are accustomed to begin and end the series of exercises with it. This apparatus draws the shoulders and ribs in an exactly graduated scale in slow time, about twenty to the minute, upward and, by means of a cushion gently pressing into the back, somewhat backward, and so produces passively a degree of inspiratory action which otherwise could be attained only by co-operation of all the accessory muscles. Expiration ensues by the dropping of the thorax and shoulders from the force of gravity. We thus aim at a considerable rhythmic increase of the negative pressure inside the thorax without appreciable muscular exertion. Secondarily is added further the rhythmic dilation and collapse of the axillary veins by a certain degree of abduction and subsequent adduction of the arms. Not infrequently one can see the influence of this apparatus in the diminution of the pulse-beats during and after the exercise.

While with this apparatus, then, we are dealing with passive respiratory gymnastics. most of the active apparatuses besides subserve active respiratory exercise in a very practical way. Zander has given for the several apparatuses precise respiratory prescriptions, which mostly depend upon the fact that motions of the extremities away from the body are associated with inspiration. The advantages of this respiratory gymnastic are obvious: in the first place the respiratory muscles are used at the same time with the muscle-groups to be exercised; secondly, respiration is rhythmically deepened; thirdly, the simultaneous breathing guarantees the proper performance of the exercise in slow time.

The action of the aforesaid apparatuses is further supplemented by the massage and vibratory machines. By some physicians massage has been recommended as an essential means for the treatment of circulatory diseases. I can concur with this only very conditionally. To be sure, by massage we can influence the tone of the muscles, further the resorption and mechanical disposal of the products of stasis, as well as accelerate the circulation by emptying the veins; but the action of massage alone is always only very limited. From the foregoing it is clear that we should have to give up a series of important forces. On the other hand, massage gains in value if we combine it in suitable cases with medico-mechanical gymnastics. Up to a certain point we are assisted to this end by the mechanically driven massage apparatuses, which in and for themselves do not raise the claim to replace manual massage. We assign these apparatuses mostly so that, after one or two active ones, there follows a massage or passive apparatus whereby at the same time there is interpolated a certain pause for rest, which we ordinarily prolong by several minutes of complete quiet in the sitting posture.

The action of the vibratory apparatus is emphasized by all authors who possess a large experience in the Zander method. We customarily employ it by placing in the back, between the shoulder-blades, a cushion the size of the hand, and during or after its operation can often establish a decline in the pulse-rate. Precisely upon what this action rests is a still very hypothetical and much-debated point.

Of these numerous apparatuses we now put together 8, 10, 12 or more, and usually change the prescription after several days of exercise in order that all the muscle-groups may be employed in as short a time as possible. To go further into details does not lie in the plan of this paper, the less that the special prescriptions can be given only by the supervising physician. Likewise particulars of determining indications are not here to be considered. I think that in the discussion of the physiological questions it is plain that in general those cases are especially favorable for mechanical treatment in which the affection of the peripheral circulatory organs stands in the foreground. Nevertheless, many cases of valvular defects, diseases of the cardiac muscle, and others are also open to beneficial influence. The indication must always result from the consideration of the particular case, over which the physician in charge naturally has the best judgment.

The limits of the Zander method, in short, do not coincide with those of the mechanotherapy of circulatory diseases. If we disregard external agents, such as change of locality and so forth, yet there still remains a greater part of cases in which the general condition does not permit regular exercise in a Zander institute. Here there come to our aid the above-mentioned methods of Ling, Schott and others. Since in most cases it will hardly be possible for the physician himself to undertake these time-consuming exercises, he needs for this purpose a conscientious, well-trained staff. In hospitals attention can of course more readily be paid to this demand.

Only a few words more about the "Oertel cure." The field of indication is here the smaller that in a high degree we rely on the intelligence and trustworthiness of the patient himself. In the special resorts, to be sure, we have at our disposal a certain number of provisions for control, but for how few of our patients can we procure the benefit of making use of such resorts? Even though the opportunity of exercising in the fresh air and under favorable climatic conditions gives the "Oertel cure" a considerable advantage, this is yet many times compensated by the fact that the Zander method, considered from its greater attainability, offers an important guarantee for proper and careful employment. But just as in determining indications, we ought never to fall into partialities, so in therapy, be it far from me to advocate one method when, according to the condition of the case, another commends itself more.

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FINAL REPORT ON A CASE OF STOKES-ADAMS DISEASE.

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In the Boston Medical and Surgical Journal for Dec. 19, 1907, I reported a case of Stokes-Adams disease, with arteriosclerosis and a limited degree of hepatic cirrhosis. The patient died Dec. 15, 1907, and an autopsy was performed by Dr. Oscar Richardson. His report is below, preceded, however, by a very interesting description of the fundi oculi furnished by Dr. F. E. Cheney some days before the patient's death.

OPHTHALMOSCOPIC EXAMINATION.

There was no pulsation of the retinal artery, but the venous pulsation was much more marked than is seen under normal conditions. In the right eye there was almost a complete obliteration of the blood-stream at the point of exit of the central vein from the eye, following the pulsation, and this obliteration extended at times from the center (point of exit) to the edge of the disk. In the left eye the marked decrease in the size of the blood-stream was not noticed. This may have been due to a difference in the anatomical arrangement of the vein in relation to the physiological cup of the disk. Another condition of interest was noted, however, in the vein extending upward along the extreme edge of the cup border, and that was a slight venous contraction between the well-marked pulsations. This secondary contraction was not constant but seen at irregular intervals.

AUTOPSY BY DR. OSCAR RICHARDSON.

A man, sixty-eight years of age, 164 cm. long, well developed and poorly nourished.

Head. — On section the pia is slightly thickened and generally is infiltrated with a considerable amount of pale fluid. The vessels of Willis are not remarkable. The sinuses and middle ears are not remarkable. The *brain* weighs 1,295 gm. On section it presents no lesions.

Trunk. — The skin of the anterior abdominal wall in the region between the umbilicus and pubes shows several old scars, stated to be tap wounds.

On section, subcutaneous fat very small in amount, muscles thin and pale.

The peritoneal cavity contains a considerable amount of thin, pale, amber-colored fluid.

The appendix is not remarkable.

The anterior margin of the right lobe of the liver is four fingers' breadths above the costal border in the right mammillary line.

The pleural cavities contain a slight amount of pale fluid.

The bronchial lymphatic glands are slightly enlarged in instances, pigmented, and a few of them show small fibro-calcareous masses.

The right lung shows a few adhesions posteriorly and laterally. On section the tissue presents no areas of consolidation, is somewhat leathery and yields a considerable amount of yellowish red, frothy fluid.

The left lung is free. On section the tissue presents no areas of consolidation and is similar in character to that of the right lung.

Heart. — Weighs 390 gm. On section the myocardium generally is a little lax and rather pale.

The left ventricle wall measures 13 mm., the right, 2.5 mm.

The ventricular walls as a whole are rather thin and the columnæ carneæ flat. The auricular walls are slightly if at all thickened. The cavities of the left side are definitely enlarged, while those of the right side are but slightly enlarged. The auricular appendages are free. The mitral valve measures 9 cm. in circumference; the aortic, 7.5 cm.; the pulmonary, 7.5 cm. and the tricuspid, 12 cm. The pulmonary and tricuspid valves are not remarkable. The curtain of the mitral valve is smooth on its auricular and ventricular surfaces. The ventricular surface of the anterior cusp of the mitral valve shows a very few small, yellowish streaks and areas. These are situated near and just below the left posterior cusp of the aortic valve. In the region of the fibrous ring of the mitral valve, where the valve curtain is inserted, there is a slightly curving column of fibro-calcareous material, resting immediately beneath the insertion of the valve curtain of the posterior cusp and extending from there directly across and beneath the endocardium of the left ventricle wall and reaching finally to a point close to the base of the anterior cusp of the aortic valve and in the region of the bundle of His. This fibro-calcareous mass measures about 6.5 cm. in length, and where it rests in the fibrous ring of the mitral valve, in the region of the insertion of the curtain of the posterior cusp, it measures 7 mm. in width by 7 mm. in thickness. Beyond this it gradually tapers to its end in the region of the bundle of His. The fibro-calcareous mass rounds up under the endocardium and on section extends for a short distance into the myocardium all along its course. The chordæ tendineæ, where they are inserted into the papillary muscles, show a very slight amount of fibrous thickening, but otherwise than above mentioned the valve is not remarkable.

Aortic valve. — The cusps all show fibrous thickening and at their bases some fibro-calcareous change. Each cusp shows in the region of the orange body small, firmly adherent, grayish yellow, irregularly shaped, rather firm, slightly leathery, vegetationlike masses measuring about 1 cm. by 6 mm. by 4 mm. The endocardium below the cusps shows several small, yellowish, fibrous-like areas. The sinuses of Valsalva are enlarged and pouchlike and the intima of the aorta at the upper margins of the sinuses shows areas of fibro-calcareous change. The wall of the anterior sinus of Valsalva shows one or two small masses of fibro-calcareous material and about the orifice of the right coronary artery some fibro-calcareous plaques. The great sinus of the aorta is well marked but the intima of the aorta here is fairly smooth, showing only a few small areas of fibrous thickening. The first portion of the left coronary artery shows a well-marked fibro-calcareous plaque, but beyond this the intima of the vessel is smooth. The first portion of the right coronary artery shows a slight amount of fibro-calcareous change in one or two places, but beyond this the intima of the vessel is quite smooth.

The arteries are free.

Aorta. — On section the intima shows here and there small areas of fibrous thickening, but in the lower part of the abdominal portion there is a slight amount of fibro-calcareous change. The great branches of the aorta show in their walls a rather considerable amount of fibrous change and in places well-marked fibro-calcareous plaques.

Liver. — Weighs 1,142 gm. The organ is small. The capsule, which is very slightly thickened, is smooth and glassy and rounds up over slightly irregularly surfaced liver tissue which gives over large areas a granular appearance. On section, the tissue is tough and faintly mottled with minute to small indefinite grayish areas.

Gall bladder, no stones. Bile ducts, free. *Pancreas*, not remarkable. The duct of Wirsung, free.

Spleen. — Weighs 472 gm. The capsule is grayish and slightly thickened. At one point on the surface of the spleen there is a small dull, grayish yellow area which on section is seen to be the outer surface of a roughly wedge-shaped, dense, dull yellowish mass, the peripheral portions of which are sharply marked off from the surrounding splenic tissue. The mass extends into the splenic tissue for a distance of about 2 cm. On section the splenic tissue is rather dark red in color, somewhat elastic and the follicles and trabeculæ are visible. Adrenals, not remarkable.

Kidneys. — Combined weight 274 gm. The capsules strip, showing very slight adhesions in places. The surfaces are dull grayish red in color, granular in places and show here and there small depressions, On section the tissue is rather tough and the markings are fairly made out. The cortical markings are indistinct and the section surfaces are rather opaque and show some mottling with small indefinite grayish areas. The cut ends of the vessels in the section surfaces are quite distinct.

Ureters, free.

Bladder, prostate, seminal vesicles and testes on section are not remarkable.

The esophagus, stomach and intestines on section present no lesions.

Bacterial report. — Culture on blood serum: —

Heart. — No growth.

Microscopical examination. — Serial sections of the myocardium at the base of the anterior cusp of the aortic valve, including the region of the bundle of His and the end of the fibro-calcareous column which extends into this part, show after Zenker's fluid and Mallory's connective tissue stain, extensive fibrous and fibro-calcareous change all through the regions mentioned.

Anatomical diagnosis. — Arteriosclerosis. Dilatation of the sinuses of Valsalva. Sclerotic vegetations of the aortic valve. Fibro-calcareous endocarditis of the aortic valve. Fibro-calcareous mass in the region of the fibrous ring of the mitral valve with extension of the mass along the wall of the left ventricle to the region of the bundle of His. (Stokes-Adams disease.) Hypertrophy and dilatation of the heart. Chronic passive congestion. Slight chronic interstitial hepatitis. Slight chronic nephritis. Hyperplasia of the spleen. Infarct of the spleen. Ascites. Slight chronic pleuritis (right). Obsolete tuberculosis of bronchial lymphatic glands. Edema piæ.

Clinical Department.

REPORT OF A CASE OF MEASLES IN UTERO.

BY NATHANIEL R. MASON, M.D., BOSTON,
Assistant in Obstetrics and Gynecology, Harvard University: Third Assistant Visiting Surgeon for Diseases of Women, Boston City Hospital: Physician to Out-Patients, Boston Lying-in Hospital.

I WISH to acknowledge my obligation to Dr. John H. McCollom, the resident physician at the South Department of the Boston City Hospital, for the opportunity of taking charge of the case here reported while I was his assistant resident physician.

The patient was a primigravida, nineteen years old, who entered the South Department on May 19, 1904. Physical examination at entrance was as follows: Well developed and well nourished. Chest negative. No aural or nasal discharge. Eyes: Marked suffusion and congestion. Mouth: Koplik's spots on buccal mucous membrane. Brilliant macular rash over roof of mouth and soft palate. Fading maculo-papular eruption of measles over the entire body, with a confluent rash over the face. Fine desquamation on the nose and ears. Abdomen enlarged to about the size of a full-term pregnancy. Position of fetus: O. D. P. Fetal heart 144 in right lower quadrant. Temperature 98°. Pulse 90. Respirations 25.

She made a good convalescence from her attack of measles and a week after entrance the eruption had faded, leaving considerable pigmentation over the body and a fine desquamation upon the face.

Eight days after entrance the patient was delivered by high forceps for delayed labor. The infant was examined immediately after birth by Dr. McCollom, who found that there was a mottling of the skin over the entire body and a branny desquamation over the chest and in the axillae. On the following day desquamation appeared over the forehead, on the plantar surface of the toes and between the toes. On the second day there was more profuse desquamation over the chest and face, being of a markedly furfuraceous character on the sides of the nose. Desquamation was also present upon the abdomen. On the thirteenth day very slight, fine desquamation could be seen over the temples and in the axillæ. On the seventeenth day fine desquamation could still be detected in each lower axilla. On the twenty-first day desquamation had completely disappeared and there was no sign of infection with measles. Mother and baby were discharged well from the hospital on the twenty-third day after delivery.

The question arises, Did the fetus have measles in utero? The mother had a typical attack of measles, and the regular desquamation took place in the usual course of the disease. Delivery occurred during the period of desquamation of the mother, and the infant showed pigmentation and also unmistakable desquamation at birth. But did the infant have the desquamation of measles, or the normal exfoliation of the newborn? Holt[1] points out that normal desquamation begins upon the fourth or fifth day and is completed in from ten to fourteen days. In this case not only was desquamation present at time of birth, but traces of it persisted for twenty days. It is not necessary to consider the exfoliative dermatitis of the newborn mentioned by

Ritter, for he describes this as ordinarily developing during the second and third weeks, a condition considered by Kaposi as an increased physiological desquamation. Rotch[2] points out that in measles the furfuraceous character of the desquamation is noticeable on the sides of the nose, which was a prominent feature in this case. Then there is also the striking fact that although the mother nursed the child, and they remained

died during the stage of desquamation. Michaelsen cites 2 cases of measles in newborn children. In the one which he saw himself, the child was born with the eruption, the mother being also in the same stage of the disease. The results are not given in either case.

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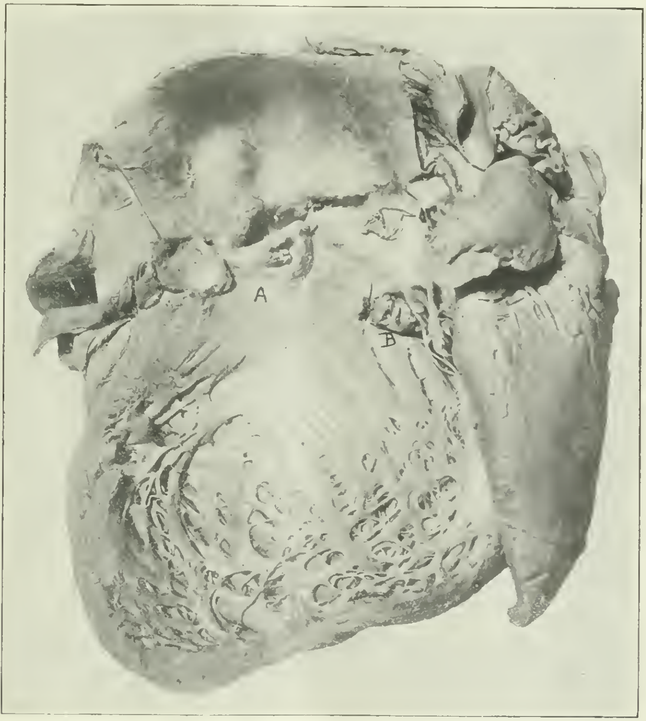
[1] Holt: Diseases of Infancy and Childhood, 1906, p. 922.
[2] Rotch: Pediatrics, 1906, p. 581.
[3] Keating: Cyclopedia of the Diseases of Children, 1889, vol. i,

STOKES-ADAMS DISEASE — VICKERY



A. End of fibro-calcareous column. *B.* Just above the letter the column is seen extending from the posterior segment of the fibrous ring of the mitral valve across the heart wall and the region of the bundle of His.

result is not stated. Chaussit reports the case of a woman who had had measles in infancy and suffered from a second attack during pregnancy. She was delivered on the second day of the disease and the child was also affected. The result is not given. Clarus observed the eruption of measles quite plainly on a fetus, the mother of which had

of erythema scarlatiniforme or as allied to Hallopeau's pyodermites. The patient was a boy aged twelve. In 1903, the left ring finger was injured slightly. Shortly after the injury the eruption appeared, first upon the wounded finger, thence spreading gradually until in the course of a year it had involved practically the whole body. For three years recurrences occurred at freareas of fibrous thickening. The first portion of the left coronary artery shows a well-marked fibro-calcareous plaque, but beyond this the intima of the vessel is smooth. The first portion of the right coronary artery shows a slight amount of fibro-calcareous change in one or two places, but beyond this the intima of the vessel is quite smooth.

The arteries are free.

Aorta. — On section the intima shows here and there small areas of fibrous thickening, but in the lower part

region of the bundle of His. (Stokes-Adams disease.) Hypertrophy and dilatation of the heart. Chronic passive congestion. Slight chronic interstitial hepatitis. Slight chronic nephritis. Hyperplasia of the spleen. Infarct of the spleen. Ascites. Slight chronic pleuritis (right). Obsolete tuberculosis of bronchial lymphatic glands. Edema piæ.

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Keating [3] states that the transmission of measles from mother to fetus is a very rare occurrence, but not unknown.

The literature on the subject of measles in the newborn is very meager, and the following are the only cases which I have been able to find reported.

Tyler [4] describes a case of measles in a woman who was delivered at the time of the fading of the eruption. The infant showed no sign of infection at birth, but on the following day began to show the initial catarrhal symptoms of measles, and on the third day showed a typical eruption. Both patients made a good convalescence.

Smith,[5] of Fall River, reports the case of a woman who showed the initial signs of measles at the time of delivery. The baby was asphyxiated at birth but was resuscitated. On the morning following the day of delivery both mother and child were covered with an eruption of measles.

Underhill [6] cites the following cases of different men. He mentions 6 cases reported by Thomas in which the mothers were convalescing from measles and gave birth to children covered with a typical rash of the disease. Fabricius had a patient who, in the middle of her ninth month of pregnancy, was attacked by measles, and on the fourth day of the disease delivered herself of a child covered with a typical rash. The mother and child were both very ill, but finally recovered. Hedrich mentions a patient who was attacked by measles near the close of pregnancy, and on the fourth day was delivered of a child covered with the rash of measles and showing severe catarrhal symptoms, — coughing and sneezing. Mother and child made a good convalescence. Kunze speaks of a woman who was delivered while she had the rash of measles, and five days afterwards the child was attacked with the disease. Both patients died. Ledelius saw a case in which a woman was confined near the end of pregnancy while suffering from the eruption of measles; the child was covered with red spots; the mother recovered, but the result for the child is not stated. Guersant mentions a case where a newborn infant contracted the disease from its mother; the result is not stated. Chausit reports the case of a woman who had had measles in infancy and suffered from a second attack during pregnancy. She was delivered on the second day of the disease and the child was also affected. The result is not given. Clarus observed the eruption of measles quite plainly on a fetus, the mother of which had died during the stage of desquamation. Michaelsen cites 2 cases of measles in newborn children. In the one which he saw himself, the child was born with the eruption, the mother being also in the same stage of the disease. The results are not given in either case.

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[1] Holt: Diseases of Infancy and Childhood, 1906, p. 922.
[2] Rotch: Pediatrics, 1906, p. 581.
[3] Keating: Cyclopedia of the Diseases of Children, 1889, vol. i, p. 228.
[4] Tyler: Med. Times, London, 1847, vol. xvi, p. 292.
[5] Smith: Am. Jour. Med. Sc., Phila., 1870, vol. lix, p. 282.
[6] Underhill: Obstet. Jour., Great Britain and Ireland, 1880, vol. viii, pp. 385–394.

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DERMATOLOGICAL CONFERENCE, MASSACHUSETTS GENERAL HOSPITAL.

APRIL 23, 1908.

Dr. John T. Bowen, presiding.

CASES REPORTED BY H. P. TOWLE, M.D., BOSTON.

SCLERODERMA.

Case I. A young woman presenting upon the right cheek a band about one and one-half inches wide which extended from the zygoma nearly to the edge of the lower jaw, passing about one inch behind the corner of the mouth. Over this band the skin was pearl white and atrophic. It was pliable throughout its whole length except over one short piece at the level of the mouth, which was so thickened that it could not be easily pinched up. A similar band existed upon the mucous membrane of the right cheek which ran nearly at right angles to the band on the outside of the cheek. Numerous small pea-sized round areas of pearl-white color were scattered over the skin in the immediate neighborhood of the band on the cheek.

LYMPHANGIOMA CIRCUMSCRIPTUM.

Case II. Girl, age sixteen. Beginning several years ago with the appearance of a single small blister at about the middle of the thigh on its inner surface, the affection has steadily involved a larger and larger area as new lesions appeared one after the other at a continually increasing distance from the center. Eventually an area as large as the palm was covered with minute, thickly crowded "frog-spawn" vesicles in larger and smaller groups. Punctate angiomata were were abundant about the borders of the affected area, but also occurred in moderate numbers scattered about between the groups of vesicles. Local applications had no effect. Finally the diseased area was excised but in a few weeks the affection recurred and seemed to spread more rapidly than before. Recently the part has been alternately strapped with adhesive plaster and painted with contractile collodion. Under this method great improvement has taken place so that to-day the area affected is less than one fourth of the area involved before beginning the treatment.

DERMATITIS HERPETIFORMIS.

Case III. Doubt was expressed as to whether this very unusual case should be considered as a dermatitis herpetiformis of a pustular type, as an aberrant form of erythema scarlatiniforme or as allied to Hallopeau's pyodermites. The patient was a boy aged twelve. In 1903, the left ring finger was injured slightly. Shortly after the injury the eruption appeared, first upon the wounded finger, thence spreading gradually until in the course of a year it had involved practically the whole body. For three years recurrences occurred at frequent but irregular intervals. These always pursued the same course. First a scarlatiform erythema appeared which spread with great rapidity over the whole body. The erythema was quickly followed by innumerable minute pustules apparently seated beneath the epidermis. For a variable period one crop succeeded another, but gradually the intensity of the attack decreased until finally the eruption ceased. The pustules showed no tendency to spontaneous rupture but dried slowly. As they dried the epidermis over them became detached so that the resulting profuse scaling which the end stages presented suggested dermatitis exfoliativa. The size of the scales seem to vary according to the abundance of the preceding pustules, being larger when the lesions were most abundant and crowded together. At times the epidermis of the hands and feet was thrown off in large casts. Constitutional disturbances were marked during the height of the attack, decreasing as the eruption passed off. The temperature curve also ran a parallel course to the intensity of the outbreak, rising to 103° or more and then dropping gradually. Occasionally the recurrence, instead of spreading over the whole body, remained limited to a single part. For three years one outbreak followed another so rapidly that there never was an interval of freedom. Since then the intervals between the attacks have been gradually lengthening until now a year has passed since the last recurrence.

ERYTHEMA INDURATUM TUBERCULIDE.

Case IV. Woman, aged twenty-one. In view of the discussion existing as to the tubercular nature of erythema induratum, its association with an eruption which may fairly be classed among the tuberculides acquires a certain interest. The patient in childhood was operated upon several times for scrofulous glands of the neck. For several months past the glands beneath the right side of the jaw have been greatly enlarged, which have increased in size somewhat but which have shown no tendency to ulcerate. Upon examination there is found to exist beneath the jaw on the right side a swelling about the size of a child's fist, which is proved by palpation to be made up of a chain of glands varying in size up to a bantam's egg. Each gland is perfectly distinct, rounded, moderately tender and with a smooth surface. Every spring for the past seven years the patient has suffered from an eruption upon the backs of the lower legs such as are now present. The lesions have a congested, reddish color, an average size of a walnut or larger, which are infiltrated, tender, freely movable over the deep tissues and tend to ulcerate. This year for the first time there has been an eruption on other parts of the body. Upon examination there is found upon the fronts of the thighs and lower legs, the outer surfaces of the upper and lower arms and on the flanks an eruption consisting of lesions which vary in size from the head of a large pin up to that of a three-cent piece. In the center of each lesion is a hard horny plug projecting slightly above the general surface. When this central plug is forcibly removed a rather deep, funnel-shaped ulcer is exposed. The skin immediately surrounding is reddened and covered with thin, laminated scales but is not infiltrated. There are no subjective symptoms and the general health has been good.

PSORIASIS.

Case V. Girl, aged twelve. This case was previously shown with an eruption of the typical psoriatic lesions. Since then there have been constant recurrences which have shown a steadily diminishing intensity until, as in the eruption here shown, the lesions, although very widespread, are very much more superficial than formerly. In connection with this case the father was shown with typical, thickened, scaling patches of psoriasis. It was learned, further, that the patient's maternal grandmother has an eruption similar to that seen in the father.

ALOPECIA AREATA WITH TINEA TRICOPHYTINA.

Case VI. In December, 1907, several patches of alopecia areata developed upon the scalp and are still present. A few weeks ago a swelling developed partly upon one of the patches and partly upon the adjacent scalp which clinically strongly resembles kerion. Microscopical examination has demonstrated the presence of a microsporon.

TUBERCULOSIS CUTIS.

Case VII. This case has had injections of tuberculin at intervals during the past ten months and is shown to demonstrate the effect of the treatment.

VERRUCAE PALMAE.

Case VIII. Duration two months. The case is shown to illustrate the palmar warts recently described by Dr. Bowen.

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Medical Progress.

PROGRESS IN DERMATOLOGY.

BY JOHN T. BOWEN, M.D., BOSTON.

LEPROSY.[1]

J. Ashburton Thompson, of Sydney, New South Wales, lecturing at the Polyclinic and Post-Graduate Medical School of London on this subject, with which he has had considerable personal experience, declares that there is not yet sufficient proof that the bacillus lepræ is really the cause of the disease, although we infer this from the frequency with which it is found within the diseased tissue. He thinks that while the inference that the bacillus is causative is probable, we should not claim it as a certainty. He declares that the bacillus is not found in all leprous processes; as, for example, a case reported by him, which was undoubtedly one of nodular leurosy, in which repeated examinations failed to demonstrate the bacillus. In this case the nerves were more or less enlarged, but no bacillus could be detected histologically.

Assuming that the bacillus lepræ is the cause of leprosy, it would appear that every leper who discharges and scatters leprosy bacilli must be a danger to others. But observed facts show that some third factor is indispensable.

The results of the writer's investigations in New South Wales are that the avoidance of association with lepers is not enough to avoid attack, while, on the other hand, close association with lepers is of very little practical importance. He thinks, therefore, that the available evidence makes it more probable that the infection of leprosy is received by man from his environment rather than from the sick. He also thinks it very probable that the infection is received by ingestion. His observations tell against the theory that infection is commonly received by the nasal mucous membrane. He admits that this is often the fact and that bacilli can often be demonstrated in the secretions, and yet cases are not uncommon in which no such evidence can be obtained and in which no signs of leprosy of the nares can be found.

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[1] Lepra, April, 1908.

With regard to treatment, his experience with Chaulmoogra oil is that it almost always does some good, yet in his own hands it has been limited to a slight improvement, and that improvement has been in the patient's general condition, as a rule, so that he was uncertain whether it was due to the medicine or to the renewed hope of recovery. It could never be looked upon in the light of a cure.

BILATERAL TELANGIECTASES WITH INTERNAL HEMORRHAGE.[2]

Fox records the case of a woman who was engaged in house-work. At ten years of age she had had considerable epistaxis almost every morning for six months, and at fourteen she had noticed some red spots in the left axillary region and later on the left and right back. These spots have gradually increased in number and distribution. She has had a number of times bleeding from the rectum, sometimes continuing several hours. She does not bleed especially from cause nor is she subject to blood effusions in the skin. On two occasions the rough use of a bath towel has caused oozing of blood for some hours.

She presented the appearance of a well-formed, healthy-looking girl, with slightly cyanotic hands and cheeks, and with rather a slow pulse. Over the lower part of the trunk, especially on the left side, there is a purple eruption of the character of small hemorrhages into the skin. These are seen to be dilated capillary blood vessels, at first punctate, gradually coalescing to form small papules the size of half a split pea.

Nothing abnormal could be detected in the internal organs. An examination of the rectum under anesthesia showed the mucous membrane normal. Microscopical examination of the lesions of the back showed dilatation of the blood capillaries without other changes.

Fox goes quite exhaustively into the literature of the subject, describing various forms of telangiectases as illustrated by various nevi, and dilatation of vessels accompanying various dermatoses, as well as those symptomatic of the disturbance of general circulation.

Four groups of essential, or primary, telangiectases are described following lanceplaine.

Group 1 is characterized by diffuse areas, or a network. The diffuse areas may occur in quite large numbers over any part of the trunk, and sometimes on the face. Those with a diffuse network may occur on any region, and are found chiefly in women.

Group 2 consists of essential telangiectases in plaques. Cases of this variety have been described by Brocq, Morrow and others.

Group 3 is characterized by the formation of slightly raised papular and nodular forms. It is common after forty or fifty years of age. They occur on all parts of the body, and especially the trunk and extremities, rarely on the face and hands. Their characteristic features are their situation in the subpapillary vascular layer, and the presence of a fibrous layer separating them from the epidermis. It is not quite clear where these senile angiomata should be classified.

Group 4 has been described by Osler under the title of a "family form of recurring epistaxis with multiple telangiectases of the skin and mucous membranes." Since then several other cases have been recorded. It tends to affect more than one member of the family, and a comparatively large number of the relatives suffer from epistaxis. In this form the telangiectases are scattered more or less numerously over the face, lips and ears, and on the mucous membranes of the mouth and nose. In most of these cases there was a tendency to bleeding from the nose early in life, the attacks of hemorrhage and anemia becoming more severe with advancing years. As a rule the hemorrhage is only from the nasal mucous membrane.

Fox finds it difficult to classify the case here recorded. Notwithstanding the history of epistaxis in childhood and the subsequent rectal bleeding, he is not prepared to include it in the fourth group. There is no family history of bleeding, and epistaxis, and the site and picture of the telangiectases is peculiar.

ALBUMINURIA AND SCABIES.[3]

The writers state that their attention was drawn to the association of albuminuria and scabies in October, 1906, and their article records the results of their investigations during a year.

Various writers have called attention to the fact that albuminuria and occasionally nephritis occurs in connection with scabies. Nicolas and Jambon relate with great detail 16 cases in which they have observed this association of albuminuria and scabies. Besides these cases in which albuminuria was found, 85 cases were examined in which no albuminuria could be detected. In 66 of these 85 cases the acarus was detected by the microscope. The cases differed in clinical form, some of them being discreet, other generalized, while in some cases there were numerous pustules. In most of the cases the urine was tested for albumen before any treatment had been begun, in a few cases a quarter of an hour after the usual treatment, and in a few cases the morning after the treatment. The examinations after treatment were made with the view of determining whether the treatment could cause a transitory albuminuria. They were always negative.

One hundred and one cases in all were studied, of which 11 showed albuminuria. Great care was taken in these examinations to eliminate the possibility that the albuminuria might be due to the treatment. Several writers have concluded that various substances for inunction were the cause of the appearance of albuminuria, as, for example, sapo viridis, styrax, balsam of Peru, etc. These observations, if true, do not militate against the existence of a true scabietic albuminuria.

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[2] Fox, T. Calcott: Brit. Jour. of Dermat., May, 1908.

[3] Nicolas and Jambon: Ann. de Dermat. et Syph., February, 1908.

Some writers have claimed that the urine in all cases of scabies contains albumen, but in these cases the tests were so delicate that it is probable the amount of albumen was a physiological one.

It is difficult to estimate, even approximately, the time of the appearance of albuminuria, but it is probable that it occurs sometime after the appearance of the scabies. The most common form of albuminuria in association with scabies is that in which the patients do not present any symptoms on the part of the kidneys. If this albuminuria does not disappear in the twenty-four hours following the treatment, it is usually diminished. The frequency and the intensity of the albuminuria do not seem to have any relation with the confluence of the cutaneous lesions, and the presence or absence of pustules was not a factor.

In other cases a larger amount of albuminuria is present, and the patient presents a certain amount of edema, dyspnea, etc.

There are 2 cases in the literature where the nephritis became chronic and was followed by a fatal termination. In these cases the albuminuria disappears, as a rule, at the same time that the cutaneous lesions are healed.

With regard to the pathology of this condition, it has been claimed by some that the albuminuria was not due to the presence of the acarus or to the lesions caused by the parasite, but to the treatment to which the patient is subjected. That this is not always the case is proved by the fact that in most of the cases studied the albuminuria appeared before any treatment had been instituted. Other writers have claimed that the albuminuria found in cases of scabies was physiological. In reply to this, the amount of albumen detected in these cases of scabies is far greater than that obtained from the urine of people in health.

Furthermore, it has been objected that in these cases of albuminuria associated with scabies the patients were the subjects of a nephritis more or less chronic. That this is not always so is proved by the fact that the albuminuria is associated with the course of the dermatitis and clears up simultaneously with it.

As to the mechanism by which this albuminuria is produced, various theories have been advanced, which the writers pass in review.

1. That it is due to the suppression of the cutaneous functions, especially that of the excretion of certain poisons. There are physiological and pathological facts to support this theory, but in point of fact we do not observe albuminuria in generalized dermatoses, as a rule, as would be consistent with this hypothesis.

2. The theory that it is due to a vasomotor reflex action, which has its origin in irritation due to the acarus. The writers think that the cutaneous irritation caused by the pruritus probably plays a part in the appearance of the albuminuria since the albumen diminishes when treatment has been instituted and the cutaneous irritation has begun to subside.

3. Are we dealing with an infectious nephritis from a toxine? It is claimed by some that whenever albuminuria is persistent in cutaneous disease there are wounds or suppuration of the skin present as in ecthyma, impetigo and scabies. This theory supposes that septic microbes are taken into the circulation, and either these or the toxine that they elaborate give rise to an inflammation of the renal epithelium. This theory is attractive, but it is difficult to explain by it the fact that in many cases of albuminuria associated with scabies there are no appearances of pustules.

4. A possibility that the albuminuria may be due to the absorption of cellular material derived from the cutaneous lesions.

5. Finally, is the acarus capable of secreting toxic products in the epidermis, the elimination of which may cause lesions of the renal epithelium?

Reports of Societies.

AMERICAN SURGICAL ASSOCIATION.

MEETING AT RICHMOND, VA., MAY 4-6, 1908.

(Concluded from No. 13, p. 415.)

REPORT OF A CASE OF A LARGE KIDNEY STONE.

Dr. David Barrow, of Lexington, Ky., exhibited a large kidney stone weighing one pound and two drams. An analysis by Dr. Heitzmann, of New York, proved it to be phosphatic. The stone was removed from a man forty-eight years old, whose first symptoms appeared when he was eight years of age. During boyhood he averaged three or four attacks of pain a year. At the age of twenty urinary symptoms appeared. At the age of thirty-eight an enlargement was noticed about the size of an orange in the left abdominal cavity. For four years he was practically invalided. In December, 1905, he was operated on in St. Joseph's Hospital. In the region of the left kidney was a tumor about the size of a cocoanut. The tumor was enucleated and consisted of the kidney with stone in its pelvis. The pedicle was transfixed and doubly ligated with silk, the ureter was traced for about three inches and ligated with chromic catgut. Convalescence was satisfactory and at the present time, more than two years, he seems perfectly well and works every day on the farm.

RESULTS OF OPERATION ON THE KIDNEY FOR CALCULUS AND TUBERCULOSIS.

Dr. Andrew J. McCosh, of New York, presented this paper, the object of which was to trace first the future life history of patients from whom in past years a tubercular kidney had been removed. He had performed 54 nephrectomies, 19 having been done for tuberculosis. There were no fatalities due to shock. Two patients died within a few weeks after operation. Eight patients died at periods of from one to three years after operation. Five patients have made perfect recoveries and are in good health at periods varying from six to nineteen years. In 330 cases of nephrectomy which he had collected there were about 20% of permanent cures. He had performed 45 operations for renal calculi. In this paper the septic kidneys or those in a condition of pyonephrosis were excluded from consideration. Fifteen nephrolithotomies had been performed by him. Twelve of these patients are perfectly well at the present time. Dr. McCosh is inclined to the method of extraction of the stone through the kidney rather than by an incision in its pelvis.

Dr. Leonard Freeman, of Denver, in operating for stone in the kidney, prefers to cut through the parenchyma of the kidney. He finds that bleeding is easily controlled by grasping the vessels with gastroenterostomy forceps with the flexible blades covered with rubber. He exhibited an x-ray picture showing shadows resembling calculi in the ureter which were spoken of by Dr. Bevan as probably calcifications of the ligaments of the pelvis. Dr. Freeman thinks they might also be classified as calcified lymphatic glands or phleboliths. Another x-ray picture revealed a cured tuberculosis of the bladder.

Dr. George E. Brewer, of New York, thought the paper of Dr. Bevan most timely inasmuch as the modern textbooks describe the diagnosis of kidney stone in the same old words. As a matter of fact, there are no symptoms absolutely pathognomonic of stone in the kidney. Of all the signs and helps he agrees with Dr. Bevan that the x-ray is the most important. An absolutely good plate, however, must be insisted upon. One source of error are the small points shown over the ureter. The majority of these shadows mistaken for stone he thinks are confined bodies. Another source of error was illustrated in a case of a man with history of renal trouble in which the x-ray showed a shadow perfectly distinct over the region of the kidney almost as large as an English walnut and with perfectly defined edges. This proved to be a kidney absolutely destroyed by tuberculosis.

Dr. Nathan Jacobson, of Syracuse, spoke of the value of the confirmatory test of the x-ray in cases of renal stone and showed a number of plates illustrating oxalate of lime, phosphatic and uric acid stones. He related a rare case in which treatment had been given by one of his confrères for cystitis. Dr. Jacobson operated, and upon doing a perineal section a complete incrustation of the bladder wall was discovered. The child did well until anuria developed and death followed. Autopsy showed both kidneys absolutely filled with stone.

Dr. C. B. G. de Nancrede, of Ann Arbor, warned against making a diagnosis of stone in the ureter or kidney by the x-ray alone, and described a case in which diagnosis based upon the x-ray was totally wrong. He asked Dr. Bevan whether in the small percentage of failures to find the stone in the kidney or ureter by the x-ray the composition of the stone was determined. He recently removed from the bladder quite a large stone which was entirely uric acid. He has never seen such a one in the kidney or ureter. Several x-rays showed not the slightest trace of the uric acid stone removed from the bladder.

Dr. Ellsworth Eliot, Jr., of New York, confirmed the statements concerning the probability of osseous development in the ligaments of the pelvis which are mistaken for calculi. He emphasized what had been said of the atypical character of the clinical features in cases of stone.

Dr. Joseph Ranschoff uses the x-ray only to confirm a diagnosis based upon a thorough clinical study. One symptom which he believes to be absolutely characteristic of stone in the kidney is persistent, continuous microscopic hematuria. An interesting point mentioned was that ureteral calculi sometimes produce no obstruction. Dr. Ranschoff has before shown a ureteral stone which was guttered, the groove allowing the urine to pass without difficulty. He has no difficulty in controlling hemorrhage in nephrectomy with the fingers, and dislikes the clamp because it prevents examination of the ureter. Whether or not the x-ray shows stone, he never regards an operation on the kidney complete without the passage of a catheter or probe along the whole length of the ureter.

Dr. Maurice H. Richardson has had encouraging results in his operations for stone in the kidney, yet differing in experience from Dr. Ranschoff, hemorrhage causes him anxiety in the approach to the pelvis of the kidney through the kidney tissue. The question of diagnosis is to him the most interesting thing in surgery. Many times he has " taken the field " against a diagnosis of renal stone and has been right. When, however, a man like Dr. Rodman makes a diagnosis of stone, he is inclined to agree. He has seen calcification of mesentery tumors twice or three times which he thinks could easily cause a mistaken diagnosis. He has known of the continuance of pain after removal of stone from the kidney and has seen stone in the kidney fatal twenty-two years after removal of stone from the bladder, with no sign of pain during those years.

Dr. Willy Meyer believes that after exhausting laboratory research the x-ray should be employed in diagnosis of stone. Cystoscopy and catheterization should then be employed. The carmine test is of value unless obstruction is caused by the stone.

Dr. George W. Crile, of Cleveland, spoke of the value of direct transfusion of blood in a case of nephrectomy in which there had been hemorrhage. Reference was also made to a large curved clamp devised by a colleague. It is useful in the control of hemorrhage and is made on the principle of the clamp used for temporarily closing the carotid artery.

Dr. J. M. T. Finney agrees with Dr. Richardson upon the importance of diagnosis. Every unnecessary surgical operation is a reproach to surgery. In the words of a former Fellow of the association, " Nine men out of ten know *what* to do, but the tenth man knows what not to do."

Dr. M. L. Harris, of Chicago, has operated three times in bilateral tuberculosis of the kidneys with successful results.

Dr. Francis J. Shepherd does not agree that hemorrhage is easily controlled. In a recent case the hemorrhage was so severe that it was necessary to remove the kidney.

Dr. John C. Oliver, of Cincinnati, presented an oxalic acid stone which he had supposed was the largest one ever removed. That Dr. Barrow had removed a larger one was not surprising, however, for no matter what they did in Ohio, it was usual to find that they did a little better in Kentucky.

Dr. Lewis L. McArthur, of Chicago, thought it a tribute to the foresight of Dr. Senn in that when the first exhibition of the x-ray was made in Chicago and he, as the Nestor of the profession there, was called upon to express his opinion of it, said, " I see the advent of this wonder with chagrin and anxiety, lest the student, finding a short route to diagnosis, will rely entirely upon this means and forget, or neglect, the means which already are at hand." Dr. McArthur referred to a case in which clinical and laboratory evidence pointed to stone in the kidney but in which the x-ray failed to give the shadow. Operation was thus delayed for six months until the patient was insistent and at operation 20 stones were found in one kidney.

THE DIAGNOSIS AND PROGNOSIS OF TUBERCULOSIS AND SEPTIC CONDITIONS OF THE KIDNEY.

Dr. C. E. Armstrong, of Montreal, states that surgeons are interested only in unilateral and primary renal tuberculosis, that the infection is hematogenous and almost invariably descending. It is probable that the infection of the second kidney even in the presence of tuberculous cystitis is descending and not hematogenous. Nephrectomy is the safe and conservative method of treatment. Partial nephrectomy is unsatisfactory and disappointing. Nephrotomy should be preserved as a palliative measure in selected cases when no secreting renal tissue can be spared. Recovery from operation is satisfactory. Complete relief, however, depends largely upon the condition of the bladder at the time of operation and the patient's recuperative power. Figures are given to show that the results obtained in renal tuberculosis are improving.

ACUTE UNILATERAL HEMATOGENOUS INFECTIONS OF THE KIDNEY.

Dr. George Emerson Brewer, of New York, calls attention to the early stage of this disease, stating that the condition is not as a rule recognized by the profession. Nine cases were referred to, admitted to the Roosevelt Hospital during the past four years, of which only one came in with the correct diagnosis. A number of instances are given in which patients presented almost typical symptoms of appendicitis or cholecystitis and under this mistaken diagnosis were subjected to operation exposing the gall bladder or appendix. The writer divides the cases into three groups. In the first or severest type of the disease the symptoms are often ushered in by a chill. Mild surgical measures are of no avail. In the second or intermediary group the patients present symptoms often quite as severe as those of the first group, but the evidences of grave and progressive toxemia are wanting. In these cases decapsulation of the kidney with the opening and drainage of visible areas of necrosis or suppuration often leads to recovery, although a chronic nephritis may persist. Six cases of this type are reported treated in this manner with satisfactory recoveries. The third group comprises the mildest type of the disease. This requires no operation and is of surgical interest only because it accounts for certain cases observed by all surgeons in which, after a fairly characteristic history of a subacute attack of appendicitis or cholecystitis, operation reveals no lesion or sign of recent inflammation. The one pathognomonic sign present in all cases is a marked unilateral costovertebral tenderness.

Dr. Emmet Rixford, of San Francisco, reported an operation for stone in the bladder in which autopsy revealed four ureters, in three of which were stones. In another case operated for subacute peritonitis small kidney was found in the vicinity of the vermiform appendix. The right kidney was hypertrophied. Regarding the cure of double tuberculosis following removal of one kidney, he suggests an explanation in the production of hyperemia by the blood being forced into the kidney somewhat after the Bier method in the cure of tuberculosis of the extremities. If this is true it would seem not impossible to secure healing of small foci in tuberculous kidneys by other means than nephrectomy. Tuberculin may have a future in that direction.

Dr. A. G. Gerster, of New York, offered an explanation of the hemorrhage in nephrectomy occurring nine or ten days subsequent to operation by the assumption of injury to a large arterial branch causing thrombosis, and that on the tenth day the thrombosis becoming detached the hemorrhage took place. In two cases he has been obliged to remove the kidney after simple exploratory incision in the pelvis because of uncontrollable hemorrhage. In one case it was shown that one of the larger branches of the artery had been divided half way. He has since entirely abandoned the use of the knife in opening into the pelvis through the kidney and uses the following method: After incision of the cortical substance the knife is laid aside. With a curved director he pushes forward into the pelvis of the kidney. Along this he passes a dressings forceps into the pelvis. This instrument is opened and then withdrawn. The finger is inserted along the track which has thus been made by tearing and stretching.

Dr. Frederick Kammerer, of New York, reported three cases of unilateral infection of the kidney. In the first case recovery followed the removal of one kidney. In the second case, showing but two infarcts in one kidney and the other being normal, the incised kidney was tamponned and replaced. Barring a severe hemorrhage the patient did well at first, but the ascent of temperature indicates the necessity of extirpation of the kidney. The third case was one of perinephritic abscess in which removal of the kidney was finally necessary. The urine after nephrectomy was normal, as was the temperature, seeming to prove the point made in Dr. Brewer's paper that the infection can be unilateral.

Dr. John H. Gibbon, of Philadelphia, spoke of the x-ray plates as a most valuable means of diagnosticating ureteral calculi. Also important is the presence of microscopic blood. He pointed out the danger of the use of metal ureteral bougies. He referred to his previously published account of two cases of ureteral stone in which he did a combined extra- and intraperitoneal operation. The two great advantages of the method were the time saved and the less possible traumatism. While the ureters should be drained after removal of stone, there is little difference whether or not they are sutured.

Dr. Charles L. Gibson reported a case with features similar to those described by Dr. Brewer, with pain in the left kidney. Minute miliary deposits were seen at each pole. Half of the kidney at each pole was removed and the woman perfectly recovered.

Dr. George Woolsey, of New York, does not feel that a negative plate, even if considered perfect and taken by an expert, is at all a sure sign of no ureteral stone. He has operated upon two cases in which he found the lesion spoken of by Dr. Brewer and has obtained cure by nephrectomy. He feels that to Dr. Brewer is due a debt of gratitude for his presentation of a new field of pathology and treatment in kidney lesions.

Dr. Bevan, in closing the discussion of his paper, emphasized the importance of diagnosis in this order. The gross clinical picture, including history; careful ordinary examination of the urine; chemical and microscopical x-ray examination. He finds in the teaching of students great difficulty in overcoming the "laboratory habit" and in impressing upon them the importance of the gross clinical picture. While he does not regard the x-ray infallible in the diagnosis of kidney stone, he believes it can be relied upon in nine tenths of cases. Diagnosis is arrived at by exclusion and then should be confirmed by the x-ray. He relies greatly upon the amount of urea. He believes that a great many of the cases can be operated upon under nitrous oxide gas, which he considers much safer than ether or chloroform.

Dr. M. L. Harris, of Chicago, said that in the use of the segregator in removing urine from the two kidneys, if the urine dropped from the two sides synchronously, whether or not the amount is the same, it is always an indication that there has been an improper adjustment of the instrument or that an anomaly is present.

REPORT OF A CASE OF STONE IN THE BLADDER, ASSOCIATED WITH INTERMITTENT PNEUMATURIA FOR THREE YEARS AND THE SUBSEQUENT FORMATION OF A FECAL FISTULA.

Dr. A. T. Bristow, of Brooklyn, states that pneumaturia is relatively common though little mentioned in textbooks. Over 200 cases are reported in literature. The two varieties are given and the causes enumerated. In the author's reported case there had been several attacks of pneumaturia. Since January, 1907, the attack had been constant, usually occurring in the morning. Feces and bile have also been detected in the urine; also animal and vegetable fibers and shad roe. There is now a definite fecal fistula about an inch and a half above the right ureteral opening. While there is some pus and mucus in the bladder, there is no active cystitis, and except for the occasional attacks before mentioned, the patient is perfectly well so far as his general health is concerned and refuses operation.

Dr. Frederick Kammerer reported a case of pelvic abscess which had healed promptly after opening, but cystitis developed. The cystoscope revealed a large deep abscess to the right of the bladder in the mucous membrane. Some months later this abscess was operated upon and the appendix removed and the patient subsequently recovered.

Dr. Arthur D. Bevan, of Chicago, reported a case in which he had removed a kidney within the capsule and in which was found a stone which had penetrated the duodenum. The man died of hemorrhage of the lungs about the sixth day and there were found extensive septic infarcts of both lower lobes. Examination of the abdomen showed a perfectly clean peritoneal cavity, but posteriorly an opening into the duodenum which had been produced by the inflammation about the stone. In another case in which the x-ray showed an abnormally enlarged kidney, operation revealed the kidney and calyces distended with gas.

Dr. George E. Brewer, of New York, suggested the possibility of some of these cases being diverticulitis.

Dr. Emmet Rixford, of San Francisco, reported the case of a man suffering from recurrent attacks of pelvic inflammation. In preparing for operation castor oil was given which was followed by a furious peritonitis resulting in death. Autopsy showed a diverticulum. An abscess at the base of the bladder had opened both into the bladder and into the peritoneum.

Dr. George Woolsey, of New York City, reported the case of a patient who came to him for stricture of the urethra. Rectal examination showed a mass behind and to the left of the rectum. He suffered intermittent attacks of pain, with rise of temperature and pneumaturia with pus and a little fecal matter in the urine. An anterior incision was made but the mass could not be reached. It was proposed to operate posteriorly, but the man did not return. The anterior incision had enabled him to pass a catheter and so relieve the attacks of pain. It was suggested that this might be a case of acute diverticulitis following the incision.

PRIMARY CARCINOMA OF THE FEMALE URETHRA.

Dr. Lewis S. McMurtry, of Louisville, has made a diligent search of the literature of this subject in the Surgeon-General's office in Washington to the present time, and has added eleven cases to the list as recorded by Dr. J. S. Percy, of Galesburg, Ill. The entire list to date consists of 27 cases. Dr. McMurtry reports two cases in which he has operated in the last three years. In both cases the disease originated in the urethra. Both were treated by complete excision of the urethra down to the sphincter muscle of the bladder. In one case there was recurrence during the first year, rapidly extending to the base of the bladder, the perivesical tissues and inguinal glands. Further operation was not permitted. In the second case the pathological process was in its incipiency; the urethra was excised as indicated, prompt healing followed with perfect control of the bladder and there has been no recurrence one year after operation. The writer claims that early diagnosis of the condition is difficult because of the resemblance of the initial lesion to urethral caruncle. Attention is also called to the difficulty of differential diagnosis from certain syphilitic lesions which obtain in the same location. The prognosis and treatment are the same as for carcinoma in other parts of the body. The great desideratum for successful treatment is habitual examination of all cases applying to the physician with painful micturition, early diagnosis of malignant types of disease, with complete excision in that early stage of invasion when permanent cure is possible.

A CASE OF MELANOTIC SARCOMA OF THE COMMON BILE DUCT AND OF THE AMPULLA OF VATER.

Dr. Francis J. Shepherd, of Montreal, reports the case of a man aged forty-two years who, in June, 1907, complained of severe itching all over the body. Jaundice with loss of flesh and strength followed. A rounded painless swelling was noted in the region of the gall bladder. In July he entered the Montreal General Hospital for exploration and operation by Dr. Shepherd. No obstruction of the bile duct could be made out and no gallstones were found nor was there appearance of malignancy. The gall bladder was drained, but the patient died of exhaustion and asthenia six weeks after operation. Autopsy revealed a soft, brownish-black fungoid mass 2.5 cm. in length completely occluding the common duct and part of Vater's diverticulum. The mass was so soft that it could not be made out by external manipulation of the duct and a probe easily passed through the duct into the duodenum. The growth was apparently primary, for a most careful examination failed to reveal any melanotic growth elsewhere nor were there any pigmented moles on the body. It is suggested that at some time some pigment cells became dislodged from a normal situation and subsequently were arrêsted in the bile duct. Secondary melanosarcomata are common in the liver, but no case has been reported of such a growth in the common bile duct.

RHINOPLASTY FOR SUNKEN NOSE.

Dr. John F. Binnie, of Kansas City, Mo., reported a case in which the nasal bones and soft parts of the nose are intact; the cartilaginous septum absent, the end of the nose and the alæ are retracted into the pyriform opening. With a tenotome he subcutaneously tunneled the soft parts of the mobilized nose and drew strips of cartilage through these tunnels in such a manner as to act as trusses for the support of the nose. The strips of cartilage were secured from the costal margins.

Dr. John B. Roberts spoke of his interest in operations such as Dr. Binnie had done and referred to a similar case under his care of a young girl in which he had taken two large tongue-shaped flaps from her rather fat cheeks.

Dr. Leonard Freeman, of Denver, spoke of two classes of saddle nose, one in which the skin is loose and one in which there is considerable cicatricial tissue and tendency to contraction. Those of the former variety are satisfactorily treated by the use of paraffin, the latter by the employment of metal plates.

Dr. Emmet Rixford, of San Francisco, spoke of the availability of the tissue of the rib in these operations for sunken nose.

PSYCHICAL END RESULTS IN MAJOR SURGICAL OPERATIONS.

Dr. James G. Mumford, of Boston, remarks upon the entrance of psychic impressions into surgical therapeutics as well as into other forms of treatment. To ascertain the final outcome of certain major surgical operations, 500 eight-year-old records at the Massachusetts General Hospital were studied. Only 129 could be traced to the end. There were 91 women and 38 men in the series. If the statistical conclusions reached in this paper are correct, it is not unreasonable to assert that surgeons in some fashion should exercise for a longer period than is customary some supervision of their patient after operation. The experience of the social service workers at the Massachusetts General Hospital and of the competent investigators concerned in the so-called Emmanuel Church movement in Boston seem to indicate that great numbers of patients, after surgical operations, may be brought back to health and usefulness who, under the ordinary conditions of surgical convalescence, would remain semi-invalids or would regain health haltingly and after the lapse of many months or years.

FURTHER EVIDENCE IN SUPPORT OF THE THEORY THAT HODGKIN'S DISEASE IS A TYPE OF SARCOMA.

Dr. William B. Coley, of New York, based this paper upon a study of upward of 80 cases of sarcoma primary in the lymphatic glands. He stated that the small group of tumors designated as Hodgkin's disease, or pseudo-leukemia, have certain definite, clinical and histological characteristics sufficient to differentiate them from other tumors of the lymphatic glands, e. g., tuberculosis and the ordinary types of sarcoma. However, a closer study, clinical, microscopical and anatomical, furnishes strong evidence that the process dealt with is a neoplastic one, so similar to sarcoma as to be properly classified as a variety or type of the latter. The later history and autopsy record of a case published in detail in his former paper on Hodgkin's disease was given. This case is much like the one reported by Gibbons, of San Francisco (*American Journal of the Medical Sciences*, November, 1906). Dr. Coley furthermore stated that Hodgkin's disease closely resembles neoplasms, especially sarcoma, in the way in which it is affected by the x-ray and the mixed toxins of erysipelas and bacillus prodigiosus. A case of Hodgkin's disease is reported, the clinical picture of which was quite characteristic and in which the clinical diagnosis was confirmed by the microscope. The disease disappeared under six weeks' treatment with the mixed toxins and the patient is perfectly well at seven months later. There are no enlarged glands and spleen and liver are normal. The following conclusions are given:

The clinical features of Hodgkin's disease are often so nearly identical with those of round-cell sarcoma that it is impossible to differentiate the two conditions.

The histological features so closely resemble sarcoma that if a given specimen be examined by different pathologists, opinions would be about equally divided between Hodgkin's disease and sarcoma.

The onset of the disease, its course and duration, formation of general metastases and final ending in death most closely simulate sarcoma.

While in most cases the metastases occur in preexisting lymph gland tissue, this is by no means always true, since in some cases, e. g., Dr. Gibbons' and his own, the tumor breaks through the capsule, infiltrates the surrounding tissues, fascia, muscle, periosteum and the bone itself.

The fact that Hodgkin's disease and leukemia have certain features pointing to an infectious origin should not exclude them from being classed as malignant tumors, but, on the contrary, this fact furnishes additional evidence in favor of the infectious origin of sarcoma.

In view of the utter hopelessness of Hodgkin's disease as well as leukemia from surgical and medical treatment, and in view of the remarkable results obtained, though in a very limited number of cases, with the x-rays and the mixed toxins of erysipelas and bacillus prodigiosus, the best chance of success apparently lies in a wider application of these methods of treatment, either singly or in combination.

THE USE OF STERILE OIL TO PREVENT INTRAPERITONEAL ADHESIONS: A CLINICAL AND EXPERIMENTAL STUDY.

Dr. John Bapst Blake, of Boston, states that Martin, of Berlin, is said to have used oil on his sponges in certain cases to minimize adhesions; beyond this no reference to the method has been found. In Dr. Blake's study considerable quantities of oil introduced into the peritoneal cavities of cats did not produce harm. Oil was also used in seven patients. In four convalescence was characterized by less pain than usual; one case of diffuse peritonitis died without reason to infer that death was due to the oil; two cases had unfavorable symptoms, but one was evidently local sepsis; the other was probably tuberculous peritonitis. The writer concludes that absolutely sterile oil in moderate quantities may be used without danger in the peritoneal cavity. It remains in the cavity for from five to fifteen days, possibly longer. Its presence tends to prevent early and direct adhesions of denuded or inflamed peritoneal surfaces. Its use under the precautions is moderately effective in sometimes preventing and usually diminishing the formation of post-operative peritoneal adhesions.

Dr. A. Vander Veer, of Albany, has used oil in the manner reported by Dr. Blake, but in larger quantities, 4 to 6 oz. being used, and the patients did well. He believes that the amount of peritoneal adhesions following abdominal operations is overestimated.

HEMOLYTIC TESTS FOR MALIGNANCY.

Dr. George Crile, of Cleveland, gave the following report on this subject:

1. Normals, 107 tests. No hemolysis. Tests of miscellaneous diseases, 50; 4 hemolyzed. (These 4 included 1 hemoglobinuria, 1 eclampsia, 1 gastric case, diagnosis not made, and 1 hematuria.) Carcinoma, 50, 39 hemolyzed; sarcoma, 16, 13 hemolyzed; making a total of 66 cases of malignancy, in which 53 hemolyzed.

Carcinoma recurrence, or cured to prove if cured, 10. Tests made: 9 no hemolysis, 1 questionable. Papilloma, 2 tests; 1 hemolysis, 1 no hemolysis. Tuberculosis (surgical): 11 tests, 9 hemolyzed. Chronic suppuration, 10 cases, no hemolysis.

2. Of the 13 cases not giving hemolytic reaction. One gastric case (case No. 5 P), diagnosis not proven; 1 sarcoma spine (7 P), advanced case; 1 suspected sarcoma (L 10), advanced case; 1 carcinoma recurrence (9 P), advanced case; 1 cystic ovary (L 23); 5 carcinomata breast (P 17, L 79, L 86, L 96, L 143), advanced case; 2 epitheliomata (neck) (L 2, L 3), advanced case; $\frac{1}{13}$ lymphosarcoma (L 45), advanced case.

Suspected malignant cases not showing hemolysis and positive diagnosis proving no malignancy.

Two gastric cases (case No. L 6, L 20); 4 gall-bladder cases (L 19, L 51, L 106, L 170); 2 tumor of thigh (L 43, L 148); 2 cirrhosis of liver (L 61, L 87); 1 tumor of chin (L 77); 1 tumor of clavicle (L 124); 1 cystic ovary (L 139); 1 breast case (cyst) L (140).

Case on the medical service (No. L 128), March 18, 1908, showed hemolysis and reverse hemolysis, and a tentative diagnosis of carcinoma of the stomach was made. Medical service diagnosed the case anemia.

April 25, medical service palpated tumor and diagnosis of carcinoma of stomach was made from specimen of tissue from stomach contents.

SURGICAL ASPECTS OF GRAVES' DISEASE WITH REFERENCE TO THE PSYCHIC FACTOR.

George Crile, M.D., of Cleveland, accepts as proven the fundamental proposition that if a sufficient amount of the thyroid gland in Graves' disease be successfully excised relief or cure will follow. Whether the relief or cure be complete or incomplete is dependent upon the correct or incorrect judgment in estimating the amount of gland tissue removed. The serious barrier to surgical treatment is the immediate operative risk. This risk, however, is not shock, hemorrhage or infection, but hyperthyroidism. From the literature, the general phenomena, experiments, and from specific cases were derived the methods proposed in operation upon these cases. It is submitted that if Graves' disease is surgically curable. and if one of the greatest factors in the surgical risk is psychic excitation, the operation should be performed without the patient's knowledge. Such an operation was accordingly planned and found to be readily accomplished by securing the patient's consent to be treated either medically or surgically as deemed best. The method by which this is done is told in detail. Among 225 operations upon the thyroid gland 142 were for benign tumors or hypertrophies. Among these there was but one death. Among 28 cases of Graves' disease operated prior to the adoption of the present method the mortality rate was 18%. Most of these cases of Graves' disease have been of the severest types. Thirteen cases have been operated upon by the new method. In every instance the operation was performed without the patient's knowledge. The pulse rate immediately prior to and during the anesthesia and operation showed but little change. The usual abrupt circulatory changes did not appear. The author states that there is evidence to show that the thyroid gland may be psychically excited, thereby discharging a pathologic amount of its secretion into the circulation. The symptoms partially or entirely disappear after the successful removal of a sufficient amount of the thyroid gland. The psychic factor seems to be the most important in the surgical risk. This factor may be eliminated, and when eliminated the operative risk seems at once to fall.

PRIMARY CARCINOMA OF THE APPENDIX.

Dr. Richard H. Harte, of Philadelphia, reviewed the subject of primary carcinoma of the appendix, which has been regarded by some as a surgical curiosity, but showed that probably a hundred cases could be collected from the literature. Apparently the cases collected belong to two classes, the so-called basil or spheroidal-cell type and the columnar cell type. The former occurs in the majority of instances in young subjects. The latter is found in older subjects and undoubtedly possesses a much greater degree of malignancy than the former. In an analysis of 90 odd cases it is found that the average age is about twenty-nine years, that the majority of cases collected occur between the ages of ten and forty years and that nearly all the cases are found as the result of operations for appendicitis. The writer does not think there are any signs pointing to cancer other than the classical signs of appendicitis and that a diagnosis of cancer of the appendix prior to an operation is impossible. Such diagnosis can be positive only after the removal of the appendix and microscopical examination. Pathologically it would appear that all these cases of cancer are ingrafted upon a chronically inflamed appendix. In many instances the neoplasm can be detected only by the microscope and it occurs in the mucosa and submucosa. Appendiceal tumors give rise to symptoms apart from those accompanying appendicitis only when the growth invades the cecum and becomes a carcinoma of this organ. By this time the appendix has lost all its characteristics and is hardly recognizable as a part of the primary growth. Dr. Harte is of the opinion that these cecal cancers originating in the appendix are apt to occur between the ages of forty and sixty and that they have a marked tendency to metastasis or recurrence. It would seem probable that the cases of primary malignancy of the appendix fall in two classes, the columnar-cell type as found in the stomach and intestines and other parts of the alimentary tract, and the spheroidal or basil-cell type which closely resembles the carcinoma of the skin. It is, therefore, fair to consider that the basil or spheroidal-cell carcinoma of the appendix is a disease occurring in early adult life, is characterized by relatively slight malignancy, does not tend to metastasis or recurrence after operation. The columnar type appears later in life, presents the characteristics of the growth found in the stomach and intestines, etc., has a strong tendency to metastasis with unfavorable prognosis. Dr. Harte emphasizes the fact that the classical signs of appendicitis are of no value whatever in making a diagnosis which can be made only after removal of the appendix. It is said that primary carcinoma of the appendix is present in from ⅓ of 1% to 1% of all cases operated upon for chronic appendicitis and that but few cases are collected at autopsy. A much larger number would be found were routine examination made at operations and autopsies. The disease appears to be slightly more frequent in females than in males. It is argued that since primary carcinoma of the appendix takes its origin in an inflammatory process all appendices showing evidence of any irritation should be removed.

CARCINOMA OF THE APPENDIX WITH METASTASES TO THE ILEO-COLIC GLANDS.

Dr. Robert G. LeConte, of Philadelphia, called attention to the fact that carcinoma of the appendix is usually discovered by the pathologist after the appendix has been removed and that when the disease is confined to the appendix the removal of that organ is sufficient to bring about a cure. In some cases, however, the disease has extended to the cecum. A case of this type is reported in which the primary growth had spread to the cecum and presented metastases to the ileo-colic glands. The patient was a white single woman, aged twenty-one, who had suffered for ten years with repeated attacks of pain in the appendix region. In April, 1907, the appendix was removed and it was found to be invaginated into the head of the cecum with but an inch extending beyond the cecal border. Microscopical examination showed that the entire appendix was the seat of carcinoma and that the tumor growth had extended into the cecum. Six weeks after the first operation the cecum with a portion of the ileum was resected with the entire group of ileo-colic glands. At the present time the patient is apparently perfectly well. Two explanations of the sequence of events in the appendix are suggested.

EDEMA OF THE LARGE INTESTINE WITH LOCALIZED NECROSIS OF ITS WALL FOLLOWING SPLENECTOMY IN BANTI'S DISEASE.

Dr. John E. Summers, Jr., of Omaha, in this paper reported a case which followed closely Senator's definition of Banti's disease, namely, "Splenic anemia with ascites, without local evidence of a general and otherwise positive tuberculosis." Urobilin was not found in the urine. While this is important when positive, it does not negative the diagnosis of Banti's disease. Dr. Summers did a splenectomy on Feb. 28, 1907. A few days later, upon the development of apparently classical symptoms of acute perforative appendicitis, the abdomen was opened. Instead of an appendicitis there was present a large amount of bad-smelling turbulent fluid. The sigmoid flexure was displaced to the right, fixed and edematous. On its right mesenteric border there was a perforation and two sphacelated spots distally. The necrotic line was folded in as well as possible by means of a double buttonhole stitch and an omental flap was tacked over the area involved. The cecum and its appendage were also edematous, as was the rectum. After thorough irrigation the lower peritoneal cavity was sponged as dry as possible and local and pelvic tubular drainage established and the man placed in Fowler's position. To-day the man is able to walk downtown and is gaining weight. Occasionally there is a discharge from a knitting-needle-sized fistula, but it has not been deemed prudent to operate. In addition to tonics the man has taken extracts of spleen and bone marrow. Direct transfusion of blood was apparently of no particular benefit. Dr. Summers regards his case as somewhat analogous to the case reported by Delatour in his paper entitled "Thrombosis of the Mesenteric Veins as a Cause of Death after Splenectomy (*Annals of Surgery*, 1895). The findings of the condition of the splenic blood vessels in Dr. Summers' case, he thinks, proves conclusively that the post-operative thrombosis of the splenic vein can hardly be considered from another standpoint than due to the traumatism of splenectomy. Study of the literature fails to discover a single case of edema with gangrene of the large intestine following splenectomy, and the author does not recall any reported case of gangrene of the large intestine the result of thrombosis of the superior mesenteric artery or vein.

EXPERIMENTS IN FLUSHING THE INTESTINAL CANAL WITH SALT SOLUTION THROUGH ENTEROTOMY OPENINGS.

Dr. George H. Monks, of Boston, described a series of studies which he had made on animals and human cadavers to determine the practicability of the attempt to remove part of the intestinal contents by washing out the canal of the intestine through multiple enterotomy openings. The results of the experiments lead to the belief that in certain desperate cases in which the patient's life is threatened because of acute intestinal poisoning and in which simpler means have been futile, a portion at least of the intestinal contents may with advantage be removed by flushing the canal of the bowel through such openings. One desperate case already reported in which this procedure had been successfully used is referred to.

CONGENITAL IDIOPATHIC DILATATION OF THE COLON (HIRSCHSPRUNG'S DISEASE).

Dr. J. M. T. Finney, of Baltimore, after reporting the case of a young boy upon whom he had operated, reviews the literature of the subject to Jan. 1, 1908. Two hundred and six references have been studied in the preparation of the paper, and a list is appended. While to Hirschsprung belongs the credit of having first called attention to the disease, a number of cases have been found in literature antedating his classical description. After discussing the various terms that have been applied to the disease and its classification and the anatomy of that portion of the intestine concerned, there follows a discussion of the various hypotheses as to its etiology. Some ten theories have been suggested from time to time as to the causation of the disease, including that of the author of hyper-nutrition. These theories are all discussed and the arguments for and against given. No one apparently explains every case, but each will explain some. The symptomatology is dealt with fully and a complete clinical picture of the disease given, with a list of the series of cases observed in the Johns Hopkins Hospital, eleven in all. The diagnosis, differential diagnosis, the different aids to the diagnosis, prognosis and treatment are fully considered. While no one course of treatment seems applicable to all cases, the author suggests one method employed in his own case as perhaps applicable to a larger proportion than any other hitherto suggested, namely: A preliminary enterostomy, then a colocolostomy some months subsequently; finally the complete excision of the affected portion. The artificial anus is left open until after the success of the preceding steps has been assured, when it is closed under cocain.

Finally the pathology of the disease, both gross and microscopical, is exhaustively considered, accompanied by the exhibition of plates.

Dr. Leonard Freeman, of Denver, reported the case of a young man presenting a pronounced type of Hirschsprung's disease. He had been troubled with constipation ever since he could remember and as much as three months had elapsed without a movement of the bowels. The colon was enormously dilated below the splenic flexure. The surface of the large intestine was plicated and replicated and replicated again until it was reduced to something like normal size. It was impossible to make anastomosis or to resect the bowel. Enlargement of the mesentery was not noticed. The subsequent history of the case was reasonably good. Dr. Freeman would not ordinarily consider this operation of plication a good one for the ordinary case, but in the present case it answered the purpose.

PELVIC ABSCESS WITH SPECIAL REFERENCE TO RECTAL DRAINAGE.

Dr. Archibald MacLaren, of St. Paul, said that in women all intraperitoneal collections of pus, with the exception of tubercular inflammations, whether from cellular tissue, appendages, uterus or appendix, can be cured by vaginal section in the vast majority of cases. In the pelvic abscesses of men the fear of increasing the infection or of further contaminating the abscess cavity has, until now, prevented giving a man the same chance as the woman. Many appendiceal abscesses, if left to themselves, will perforate into the rectum and cure themselves. If the pressure in the abscess cavity is taken off by opening from above, the chance of Nature's best cure is lessened. He advises that in every case of acute appendicitis examination should be made through the rectum before operation. It is very important that the pelvic accumulations should be drained with a suprapubic drain followed by Fowler's position, reserving rectal drainage for the cases which later develop pelvic accumulations or convalesce badly after any course of treatment. Five cases are reported treated by rectal drainage with prompt recoveries in three, slow convalescence in two. The operative procedure is detailed and attention called to a combination trocar and dilator for use in vaginal puncture. Vaginal section is regarded as blind and not giving sufficient room for further exploration. In rectal, all that is necessary is an opening through which to pass a drainage tube into the cul-de-sac of Douglas.

Dr. Ellsworth Eliot, Jr., of New York, has seen a number of cases in which the opening for drainage of abscess cavity was established between the abscess cavity and the large intestine, and in most cases the result has been satisfactory regarding drainage and closure. In cases where Nature has made the opening, though drainage has been satisfactory in some, in a considerable number subsequent operation through the abdomen has been necessary. His larger experience has been with the suprapubic drainage and his results have been invariably satisfactory, not only with abscesses from diseased tubes, but with abscesses of the appendix.

Dr. Stanley Stillman, of San Francisco, believes that an accumulation of pus shut off by coils of intestine should be drained through the rectum.

Dr. Richard H. Harte, of Philadelphia, reported a case of a man desperately ill. Diagnosis was impossible except that there was a pelvic collection and pain referred to the left side which was thought might be a prostatic abscess. A speculum in the rectum reached a large abscess from which was drained almost a quart of pus. Recovery followed. While the method partakes of blind surgery and should not be followed invariably, in certain cases it is valuable.

Dr. MacLaren, in closing, thought fecal fistula more likely to follow in cases in which the abscess opened itself because it opens at the top. If opened by the surgeon drainage is perfect, rendering fistula improbable. Although, as Dr. Harte says, the method may be blind surgery, it becomes less blind. If an accumulation of pus is felt through the vagina or rectum there is no doubt of its presence. Dr. MacLaren has made it a rule in some of these cases never to allow a woman to die without making a vaginal section and some remarkable results have followed. Another rule invariably followed in treating such cases in men is to put a tube in the rectum.

OFFICERS ELECTED, AMERICAN SURGICAL ASSOCIATION.

President, Dr. C. B. G. de Nancrède, Ann Arbor, Mich.; Vice-Presidents, Dr. A. G. Gerster, New York City, N. Y.; Dr. Leonard Freeman, Denver, Colo.; Secretary, Dr. Robert G. LeConte, Philadelphia, Pa.; Treasurer, Dr. Charles A. Powers, Denver, Colo.; Recorder, Dr. Richard H. Harte, Philadelphia.

Place of next meeting: Philadelphia.

Book Reviews.

The Book of Prescriptions (Beasley) with an Index of Diseases and Remedies. Rewritten by E. W. Lucas, F.I.C., F.C.S. With an introduction by Arthur Latham, M.A., M.D., F.R.C.P., Physician at St. George's Hospital. Ninth edition. Philadelphia: P. Blakiston's Son & Co. 1907.

This small book contains a list of prescriptions which have been found useful. Preceding the prescriptions of the various drugs is a brief description of their physiological action, which adds greatly to the usefulness of the book. The directions accompanying the prescriptions are written in English. It is rather to be regretted that the prescriptions themselves are not also so written. This book has evidently been well received and certainly fills a place of usefulness.

The Baby. Its Care and Development. For the Use of Mothers. By Le Grand Kerr, M.D., author of "Diagnostics of the Diseases of Children"; Professor of the Diseases of Children in the Brooklyn Post-Graduate Medical School; Attending Physician to the Children's Department of the Methodist Episcopal (Seney) Hospital; Visiting Physician to the Children's Wards of the Williamsburgh Hospital and of the Swedish Hospital in Brooklyn, N. Y., etc. Pp. 150. Illustrated. Brooklyn, N. Y.: Albert T. Huntington. 1908.

This little book, dealing with the care of the baby during the first two years of life, is far better than most of its class. Its arrangement is peculiar in that it takes the care of the baby up month by month. This leads to much repetition but probably makes it easier and simpler for the mother to understand. The babies in the city of perambulators are certainly more "forward" than those in Boston and set a pace that the average baby can hardly approach. We think that the author gives other foods in addition to milk much too early and that he is altogether too liberal in his diet during the first half of the second year. We certainly cannot approve of sherry in junket for a baby of one year. The author's advice that babies wear short clothes from birth, although rational, will certainly scandalize the old ladies.

On the whole, we approve of the book thoroughly and recommend it for the purpose intended, that is, instruction of mothers.

Hygiene for Nurses. By Isabel McIsaac, graduate of the Illinois Training School for Nurses, etc. New York: The Macmillan Company. 1908.

In this volume of 208 pages the writer, out of wide experience, has presented in elementary form the main principles of hygiene as useful for the young nurse. It undoubtedly accomplishes this end in a satisfactory way and is full of excellent suggestions which may well reach a wider circle of readers than that for which the book was primarily intended.

Modern Medicine, Its Theory and Practice in Original Contributions by American and foreign authors. Edited by William Osler, M.D., Regius Professor of Medicine in Oxford University, assisted by Thomas McCrea, M.D., Associate Professor of Medicine and Clinical Therapeutics in the Johns Hopkins University, Baltimore. Volume IV. Diseases of the Circulatory System, Diseases of the Blood, Diseases of the Spleen, Thymus and Lymph Glands. Illustrated. Philadelphia and New York: Lea & Febiger. 1908.

This fourth volume of Modern Medicine has eleven contributors, among whom are many names closely associated with progress in the subjects of which they write. R. C. Cabot and J. H. Pratt write on Diseases of the Blood; Warthin and Lyon on Diseases of the Spleen, Thymus and Lymph Glands; Osler, Hoover, Blumer and others on Diseases of the Circulatory System. The volume represents, therefore, a summary of our most recent knowledge on these diseases from authoritative sources, and as such will take its place with the others which have already appeared as a satisfactory epitome of recent medical progress. The illustrations, as in previous volumes, while not particularly numerous, are entirely satisfactory in character and execution.

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CHOLERA.

We are becoming increasingly hopeful that the possibility of widespread epidemics is no longer possible. This confidence, however, is rudely shaken from time to time by the persistent recurrence of a disease in one or several localities to which no other name than that of epidemic can be applied. Such is the condition now regarding cholera, which for some months past has been threatening, particularly in Russia, and which now has extended so widely that the entire world is taking notice with reference to prevention of its spread outside of that country. The exact cause of the unfortunate situation in St. Petersburg and other parts of Russia which now exists would no doubt be somewhat difficult to determine. It is, however, reasonably safe to assume that proper measures of hygiene have been neglected, or that the authorities have been remiss in the enforcement of existing laws, when such a condition of affairs as now exists is allowed to gain headway. It is said that finally government officials in St. Petersburg have been so far able to take the situation in hand that a distinct betterment of sanitary conditions is apparent with resulting decrease in the extent of the disease. It is certainly to be hoped that the disease is well in hand, but when it is considered that there have been upwards of 15,000 cases since the beginning of the epidemic, with nearly half that number of deaths, it is evident that the work of eradication is proceeding slowly.

Naturally when any one country having commercial relations with other countries is thus afflicted, the danger of transmission of such a disease as cholera to distant regions is exceedingly great. It is, therefore, a source of congratulation to note the fact that up to this time precautionary measures have been for the most part successful. Special credit is due the authorities of Manila that the disease which frequently appears in the islands has gained comparatively little headway at this time. Recently but fourteen new cases and three deaths were reported in one twenty-four hours. A determined effort is being made by the authorities to combat the epidemic. Of all American cities, however, New York is perhaps the most exposed to epidemic disease of various sorts because of its immediate relation with foreign ports in practically all parts of the world. It is a task of no small magnitude, and one requiring constant vigilance, to prevent the importation of disease at this great port of entry. At the present time it is natural that every possible care should be taken against the admission of any one suspected of cholera. To this end Health Officer Doty of that city has of late been holding a series of conferences with Surgeon-General Wyman of the U. S. Marine-Hospital Service. The situation in Russia is regarded as the most serious in years, and when, on Sept. 24, the steamer *Korea*, from Libau, the first Russian vessel to reach New York since cholera broke out in St. Petersburg, arrived in quarantine, her passengers, numbering 444, and crew of 125 were subjected to a most minute and rigid examination. That New York has not had a case of Asiatic cholera in more than ten years is due, not to good luck, but to the constant vigilance of the port authorities, and at present the rule is being strictly enforced which detains immigrants from suspected ports under observation for five days prior to embarkation for this country. The care necessitated by this constant menace to the health of New York, and so of the country at large, no doubt works certain hardships to healthy individuals who are detained against their will in order that the health authorities may be satisfied of their harmlessness. We are perhaps too apt to forget how desirable it is that the authorities should err on this rather than on the other side and how deeply indebted the whole country should be to the extraordinary skill and vigilance which succeed in excluding diseases of public menace.

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INDUSTRIAL AND PERSONAL HYGIENE.

Under this heading Dr. George M. Kober, chairman of the Committee on Social Betterment of the President's Homes Commission, has published a report of this committee which affords interesting and stimulating reading to the hygienist, to the general physician and to that growing class which holds itself in a measure responsible for the conditions under which others live and work. The main object of this publication is to provide reliable data regarding the conditions, particularly in factories, under which persons are employed. Such a systematic statement has hitherto not been available, in marked contrast to information which has been published in Germany and in England on the same general subject. This preliminary work has, therefore, been taken up by the committee in order that, through a study of the causes of sickness among wage-earners, and through an investigation of the best means of promoting industrial efficiency, one of its obligations may be discharged. It will be generally conceded, as Dr. Kober states in his introduction, that one of the most interesting and beneficent sub-divisions of hygiene is a study of the relations of occupations to health and longevity. The danger of certain occupations and trades should be recognized, first, in order to mitigate them, if possible; secondly, to warn those about to undertake such employment of the risks to which they expose themselves. As long ago as 1700 a study along these lines was made by Professor Ramazzini, of Padua, a work which was later translated both into English and French. In 1810 the French government interested itself in the problem, and a few years after a commission was appointed in England to inquire into the condition of factory and similar employments. Subsequently similar work was inaugurated in several of the continental countries, so that considerable information was obtained regarding the amount of illness and mortality of workers in various fields. As a result of such work, and the information derived therefrom, various so-called factory laws were enacted in England between the years 1833 and 1870. A more satisfactory labor code was also established in France, Germany and other continental countries. In this country child labor received attention in Massachusetts in 1836, and other laws of public sanitary interest have later been adopted in all the states and territories. In view of these facts, it is eminently desirable that exact information should be at hand regarding all the surroundings of the great wage-earning class. A recent law enacted in Massachusetts providing medical inspection throughout the state is a step in this direction, and Dr. Kober's statistical inquiry, as published in the volume before us, cannot fail to be of value in itself and also as a stimulus to further research in a direction of much practical importance.

OPENING OF THE MEDICAL SCHOOLS.

With the exception of those medical schools whose sessions, for the benefit of their students, begin in the summer months, the great number will open their doors this week for the coming winter term. We have frequently commented on the remarkable change which has come over medical education within the last decade in this country, characterized by the closer affiliation of the medical school with the university, the disappearance of inferior schools and the general raising of the standard of admission and of subsequent requirements. There are few subjects of greater interest from the educational standpoint than methods of medical teaching. The transitional stage through which we are now passing has determined many facts with definiteness, but also leaves much opportunity for speculation as to future developments. This perhaps applies particularly to clinical teaching and especially to the more or less insistent demands which special branches of medicine are making for hospital recognition. The experiment of continuous hospital service, new in many communities, and the increasingly closer affiliation of hospitals and medical schools are all matters of extreme interest to the medical teacher as well as to the medical student, for whom these changes have chief significance. It is as yet too early to state the number of students which will this year attend our larger medical schools, but it will be no source of surprise if the number is smaller than the authorities might hope. The broadening possibilities for young men, the increasing difficulty of acquiring a living in medicine while still reasonably young and the attractiveness of a business life must all lead to a certain reduction of students undertaking the study of medicine. This is to be expected and certainly is not to be altogether regretted. Fortunately the success of a medical school cannot depend upon the number of its students.

MEDICAL NOTES.

American Electro-Therapeutic Association. — At the eighteenth annual meeting of this Association, held Sept. 22–24, in New York City, the following officers were elected: President, Dr. Edward C. Titus, of New York; Vice-Presidents, Dr. William D. McFee, of Haverhill, Mass., and Dr. Thomas D. Crothers, of Hartford, Conn.; Secretary, Dr. J. W. Travell, of New York; Treasurer, Dr. Richard Joseph Nunn, of Savannah, Ga.

Officers of American Dermatological Association. — At the meeting of the American Dermatological Association, held at Annapolis and Baltimore, Sept. 24, 25 and 26, 1908, the following officers were elected for the ensuing year: President, Dr. William Thomas Gilcrist, of Baltimore; Vice-President, Dr. William Allen Pusey, of Chicago; Secretary and Treasurer, Dr. Grover William Wende, of Buffalo. The next meeting of the Association is to be held in Philadelphia in May or June, 1909.

The Wesley M. Carpenter Lecture. — The Wesley M. Carpenter lecture will be delivered on Thursday, Oct. 8, at the New York Academy of Medicine, by Dr. Andres Martinez-Vargas, of Barcelona, Spain. Following the lecture a reception will be given by the President and Fellows of the Academy of Medicine and the Committee on Entertainment of the International Congress on Tuberculosis to the visiting members and delegates to the Congress. The lecture will be delivered in the Spanish language, but in order that it may not be unintelligible to many present, a pamphlet translation in English will be presented to every person in the audience.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Sept. 29, 1908, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 65, scarlatina 48, typhoid fever 28, measles 10, smallpox 0, tuberculosis 63.

The death-rate of the reported deaths for the week ending Sept. 29, 1908, was 20.06.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Sept. 26, 1908, was 253, against 200 the corresponding week of last year, showing an increase of 53 deaths and making the death-rate for the week 21.32. Of this number 142 were males and 111 were females; 245 were white and 8 colored; 163 were born in the United States, 84 in foreign countries and 6 unknown; 44 were of American parentage, 175 of foreign parentage and 34 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 64 cases and 4 deaths; scarlatina, 40 cases and 0 deaths; typhoid fever, 36 cases and 10 deaths; measles, 23 cases and 2 deaths; tuberculosis, 67 cases and 24 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 22, whooping cough 1, heart disease 25, bronchitis 2 and marasmus 7. There were 19 deaths from violent causes. The number of children who died under one year was 71; the number under five years 89. The number of persons who died over sixty years of age was 57. The deaths in public institutions were 81.

Cerebrospinal meningitis, 0 cases and 2 deaths.

Free Public Lectures at the Harvard Medical School. — Free public lectures on medical subjects, which have proved a success for the past two years, will be continued this year. These lectures are given on Saturday evenings and Sunday afternoons, beginning in January and ending in May. The aim which has been for the most part successfully attained heretofore is to present medical subjects of popular interest in such a way that those untrained in medicine may derive a clearer idea of its methods and objects.

Poliomyelitis. — The Massachusetts State Board of Health is sending the following notice to the physicians of the state:

> The State Board of Health is most anxious to be notified of all cases of infantile paralysis having their onset in the year 1908, in order that certain clinical data may be obtained. Will you, therefore, be so good as to notify the board of any such cases seen by you since Jan. 1, 1908?
>
> The board also desires to secure fresh feces from such cases for bacteriological examination. If you see such cases, please notify the board *at once* by telephone (Haymarket, 2700, reversing the charge, if any), or by telegram, "Collect," in order that a sterile container may be sent to you with full directions for its use. By fulfilling these requests you will be rendering valuable assistance in a matter of the public health.
>
> William C. Hanson, *Acting Secretary*.

NEW YORK.

Centenarian. — John Morris, a native of Canada, and of French extraction, died in the County Almshouse at Ballston, N. Y., at the alleged age of 114 years.

Strauss Milk Depots. — Sept. 21 was the sixteenth anniversary of the Strauss milk depots in New York, and it was given out that from Sept. 15, 1907, to Sept. 15, 1908, 4,167,675 bottles of pasteurized milk were dispensed from the stations, as against 3,081,810 during the preceding twelve months. The growth of the charity is shown by the fact that in the first year after it was started only 34,000 bottles were dispensed.

Extension to St. Mary's Hospital, Orange, N. J. — It is announced that an extension costing $60,000 is to be added to St. Mary's Hospital, Orange, N. J., in charge of the sisters of St. Francis, and that other improvements will be made at a total expenditure of about $200,000. The hospital was founded three years ago and occupies a large brick and stone building which was formerly a private residence, and is surrounded by ample grounds.

Bequests. — By the will of Henry J. Bracker, a wealthy importer of New York, who died in England on Aug. 31, $1,000,000 is left to establish a home for aged men and women to be known as the Braker Memorial Home. Other bequests are: $500,000 to Tufts College, Boston; $10,000 to St. John's Guild, to create a fund in memory of his father, the income of which is to be used in support of the floating hospital of that institution, and $10,000 to the Sheltering Arms Orphan Asylum, for a cottage in memory of his mother.

By the will of the late Winfield Tucker, of New York, the sum of $22,500 is left to the Presbyterian Hospital, to endow three beds in memory of Joseph, Isabella and Adeline Tucker; $5,000 each is bequeathed to a large number of institutions and societies, including the New York Post-Graduate Medical School and Hospital, the New York Throat, Nose and Lung Hospital, and the House of Rest for Consumptives, and $3,000 to the Fresh Air and Convalescent Home at Summit, N. J.

Conveyance of Disease by Flies. — For the purpose of confirming the results of his observations of last year in regard to the conveyance of disease by flies, Dr. Daniel D. Jackson has continued his investigations during the past summer, under the auspices of the Merchants' Association committee on water pollution. He now reports that, on comparing his work with the statistics of the Health Department, he found the relation between the number of flies captured and the number of deaths reported substantially the same as in 1907. The fly season opened earlier this year than last, but reached its height late in the month of July, as it did in 1907, and the largest weekly number of deaths, particularly from diarrheal diseases, coincided exactly with the largest catch of flies. A noticeable decrease in the mortality this summer corresponded with a catch of a much smaller number of flies, and Dr. Jackson is of the opinion that the education which the public has had in the last year in regard to the dissemination of disease germs by flies has probably had a share in keeping the death-rate down in an exceptionally hot season. The number of germs which a fly is capable of carrying on its body is extraordinary. In his report this year, Dr. Jackson states that on eighteen swill-barrel flies he found no less than 118,800,000 bacteria, or 6,600,000 to each fly.

Opening of Columbia University. — The regular session of the Medical Department of Columbia University was opened on Sept. 24 with a somewhat larger attendance of new students than last year. On this occasion the first address was by Prof. John W. Burgess, of the School of Political Science, acting president of the University, who, in the course of it, cited as an instance of medical heroism the case of the late Allan Macfadyen, director of the London Biological Laboratory, and later secretary of the Jenner and Lister Institute in Chelsea. When, some time since, visiting Professor Macfadyen in his laboratory, and finding him experimenting with the germs of deadly diseases, Dr. Burgess spoke of the danger of inoculating himself with them which he incurred, the experimenter gave the same reply as Koch when remonstrated with for exposing his life in the investigation of the African sleeping sickness: "I shall have discharged my duty." Last year he actually did fall a victim to disease caused by these germs, and the speaker regarded his death as more heroic than that of Admiral Nelson. Addresses were made also by Dr. Samuel W. Lambert, dean of the medical faculty, and Dr. M. Allen Starr, professor of neurology. The general topic of the latter was the prevention of disease. He spoke of the duty of the medical profession to impress upon the laity the importance of prophylaxis. He commended the present efficiency of the New York Health Department and its systematic efforts to disseminate hygienic knowledge among the people, and urged the utility of well-equipped municipal laboratories. Incidentally he criticised severely the work thus far accomplished by the National Department of Commerce. This department, he said, wasted all the money appropriated for its maintenance on the comparatively useless labor of collecting statistics concering corporations and trusts, instead of doing its duty in the way of regulating the employment of men, as well as women and children, engaged in unhealthful and hazardous occupations. In contrast with this neglect he cited the work accomplished by the corresponding English bureau in markedly reducing the proportion of illnesses resulting from certain kinds of work, and thereby saving many lives. The medical profession of the United States, he thought, should use its influence to compel the department to do its duty in this respect, a matter which lay wholly within its province.

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Current Literature.

Medical Record.

Aug. 1, 1908.

1. Maher, S. J. *Tuberculosis in Connecticut, especially in Rural Connecticut.*
2. Fowler, H. A. *Autochthonous Urethral Calculi: Report of a Case.*
3. Myer, J. S. *The Esophagoscope as a Diagnostic and Therapeutic Aid in Esophageal Obstruction.*
4. Dukeman, W. H. *Surgical Technic without the Use of Antiseptics: with Report of Forty-one Consecutive Successful Abdominal Operations.*
5. Polk, C. G. *Epilepsy in Private Practice, especially that from Reflex Causes.*

Aug. 8, 1908.

1. Eccles, R. G. *Darwinism and Diabetes.*
2. Rice, C. C. *Symptomatology of Recurrent and Abductor Paralysis of the Larynx.*
3. Snow, M. L. H. A. *Mechanical Vibration in the Treatment of Constipation and Pelvic Conditions.*
4. Leuschner, R. *Physiologicol Action of the Mount Clemens Mineral Baths.*
5. Britenstool, H. *The Use of Bacterial Vaccines.*

Aug. 15, 1908.

1. O'Connor, P. T. *The Surgical Treatment of Empyema.*
2. Scripture, E. W. *Treatment of Negligent Speech by the General Practitioner.*
3. Bristow, A. T. *The Hospital and the Professional Anesthetist.*
4. *Meyer, W. *The Improvement of General Anesthesia on Basis of the Principle of Adapting the Boiling Point of the Anesthetic to the Temperature of the Body (Schleich). Ten Years' Experience at the German Hospital.*
5. Abbe, R. *Anesthesia at St. Luke's Hospital.*
6. Lilienthal, H. *The Administration of Anesthetics at Mount Sinai Hospital.*
7. Gibney, V. P. *Anesthetics at the Hospital for Ruptured and Crippled.*
8. Eising, E. H. *Amputation in Diabetic Gangrene.*
9. Pendleton, E. *Anesthesia by Means of Chloroform and Ether.*

4. Meyer reports on the use of the combination of ethyl chloride, chloroform and ether as an anesthetic. The preparation of the drug, its description and its effect have been described in the *Journal of the American Medical Association* for Feb. 28, 1903. He believes it to be the safest form of anesthetic and to have least distressing after-effects. He bases his conclusions on experiences of the past ten years. [W. B. R.]

New York Medical Journal.

Aug. 22, 1908.

1. Mackie, F. P. *A Review of Recent Work on Spirillar Fevers.*
2. Davison, R. E. *Cystitis.*
3. Squier, J. B. *Two Unusual Cystoscopic Pictures.*
4. Wile, I. S. *Car-sickness.*
5. Wolff, A. J. *Some Important Points in the Anatomy and Surgery of the Peritoneum.*
6. *McGlinn, J. A. *Oxygen in the Treatment of Tuberculous Peritonitis.*
7. Feldstein, Z. *The Etiology and Treatment of Eczema.*

6. McGlinn reports four cases of tuberculous peritonitis treated by operation and the introduction of oxygen into the peritoneal cavity for twenty to thirty minutes. These cases were of the so-called fibrous variety of tuberculous peritonitis in which simple operation has not proven especially beneficial. The four cases all did uniformly well. [R. I. L.]

Aug. 29, 1908.

1. *Wright, B. L. *Treatment of Tuberculosis by Administration of Mercury.*
2. Weinstein, J. W. *Beard's Theory in the Crucible of Test.*
3. Bussman, P. F. *Properly Constructed Filtering Beds.*
4. Carling, J. *Open-Air Treatment.*
5. Kivlin, C. F. *Hernia of Tube and Ovary, complicated by Strangulation of Intestine.*
6. McMorrow, F. *Case of Actinomycosis of the Pelvis.*

1. Wright has been treating pulmonary tuberculosis by deep muscular injections of mercury since Jan. 1, 1908. All the cases were moderately advanced, many far advanced. In an earlier report 40 cases showed 70% of improvements. In this report the percentage of improvements among those 40 cases has risen to 85. He now has 65 cases under treatment and they present a very marked contrast with 41 cases not taking the injections but living under similar surroundings. The modified technic of his procedure is as follows: He gives an injection of $\frac{1}{3}$ gr. of the succinimide of mercury every other day for thirty injections; then this is followed by two weeks' course of potassium iodide, giving gr. 0.64 thrice a day, then a week's rest from medication, after which he resumes the injections and repeats. [R. I. L.]

The Journal of the American Medical Association.

Aug. 22, 1908.

1. Cannon, W. B. *The Opposition to Medical Research.*
2. Busch, F. C., Leonard, T. M., and Wright, T. *Further Results in Suprarenal Transplantation.*
3. Souchon, E. *The Preservation of Anatomic Dissections with Permanent Color of the Muscles, Nerves and Organs by a New Method.*
4. Morris, R. T. *My Present Position on Appendix Questions and References to the Dawn of the Fourth or Physiologic Era in Surgery.*
5. Graham, C. *Prominent Symptoms in the Diagnosis of Gastric and Duodenal Ulcers.*
6. Hewlett, A. W. *Clinical Observations on Absolutely Irregular Hearts.*
7. Richter, C. M. *The Relation of Anticyclonic Weather to the Prevalence of La Grippe and Pneumonia on the Northern Hemisphere.*
8. Camp, C. D. *Traumatic Cervical Myelomalacia. Report of a Case with Necropsy.*
9. Amberg, E. *Cerebral Abscess.*
10. *Herb, I. C. *Experimental Parotitis.*

10. The author isolated from a case of mumps a large diplococcus which corresponds in its essential characteristics to the organism isolated from mumps by other investigators. Inoculations of suspensions of this diplococcus into Steno's duct in the monkey and in the dog produce an acute uniform enlargement of the parotid gland accompanied with some slight fever and a distinct leucocytosis, the increase being largely in the mononuclears. [R. I. L.]

Aug. 29, 1908.

1. Porter, M. F. *Chronic Peritonitis with Complete Obstruction, caused by Numerous Constrictions of a Previously Undescribed Character, throughout the Intestine.*
2. Kassabian, M. K. *Röntgenology in Neurology.*
3. *Joslin, E. P., and Goodall, H. W. *Experiments on an Ash-Free Diet and Salt Metobolism.*
4 Pfannenstiel, F. *Abdominal Cervical Cesarean Section.*
5. McPherson, R. *Abdominal Cesarean Section, as performed at the Society of the Lying-in Hospital of the City of New York, with an Analysis of 186 Cases.*
6. Byford, H. T. *The Preparatory and After-Treatment of Abdominal Section.*
7. Wetherill, H. G. *Obstetric, Septic and Anesthetic Toxemias.*

8. Murphy, W. G. *A Summer Camp for the Treatment of Sick Babies.*
9. *Hoover, C. F. *A New Sign for the Detection of Malingering and Functional Paresis of the Lower Extremities.*
10. *Daland, J. *Venesection and Cardiovascular Affections.*
11. Stone, I. S. *Infection of Operative Wounds by Malignant Disease.*
12. Roy, D. *Nasal Analgesia as a Prognostic Symptom in Dry Catarrhal Deafness.*
13. Adler, H. M. *Experiments toward a Physiologically Isotonic Solution of Salts.*

3. Joslin and Goodall were unable to confirm Taylor's observation that acetone and diacetic acid were present in the urine when an apparently healthy individual was living on an ash-free diet. They placed two healthy individuals on Taylor's ash-free diet and were unable to find either acetone or diacetic acid in the urine. The results also showed that it is almost impossible to diminish the chlorin of the body by more than 10 to 14%. Moreover, the withdrawal of salt in a case of diabetes with acidosis does not seem to increase the acidosis. They found that edema in cases of diabetes mellitus presenting marked acidosis frequently occurred coincident with restriction of the carbohydrates in the diet. This edema, however, is not due to the administration of sodium bicarbonate, but is probably caused by the increased production of acids, which cause injury to the kidneys during excretion, thereby leading to retention of salt. Patients in diabetic coma, almost without exception present no signs of edema and show diminished chlorin in the urine if alkalies are given. The writers recommend the careful administration of salt along with sodium bicarbonate in the prophylactic and actual treatment of diabetic coma.

9. Hoover reports a new sign for the detection of malingering and functional paresis of the lower extremities. The sign is as follows: A hemiplegic or normal person when asked to lift one foot when lying in the dorsal position will press the other foot against the couch. In case of malingering the normal leg is not pressed against the couch but lies limp. This absolute lack of complemental opposition from the normal leg has been invariably present in all of the writer's hysterical paralyses.

10. Daland believes that venesection has fallen into unjustified disuse. He believes that it is especially indicated in cases of valvular disease of the heart with right-sided dilatation. In well-marked degeneration of the myocardium venesection is valueless. It may relieve pain in cases of aneurysm of the arch of the aorta. In croupous pneumonia it is often of great value when the right heart is dilated. A weak radial pulse is not a contra-indication of venesection, but rather a strong indication for its performance. [R. I. L.]

The Archives of Internal Medicine.

August, 1908.

1. *Montgomery, H., and Ormsby, O. S. *Systemic Blastomycosis, etc.*
2. *Peters, L. S. *Blood Pressure in 100 Cases of Tuberculosis at High Altitude.*
3. *Mayer, E. E., and Proescher, F. *The Serum Diagnosis of Syphilitic Diseases.*
4. *Lavenson, R. S. *Acute Insufficiency of the Suprarenals.*
5. Russell, F. F. *The Comparative Morphology of Syphilis and Yaws (Frambœsia Tropica).*
6. *Pearce, R. N. *The Theory of Chemical Correlation as Applied to the Pathology of the Kidney.*

1. Montgomery and Ormsby give a very careful account of systemic blastomycosis. They consider at length the etiology and pathology of this disease and give a full description of its clinical features.

They also give a critical survey of twenty-two cases, seven of which have never before been published. Several plates accompany the article showing the nature of the lesions.

Discussing diagnosis, they point out that the disease in its various manifestations might be confused with an ordinary pyemia, tuberculosis, syphilis, nephritis or articular rheumatism. When abscesses or cutaneous lesions are present it is a simple matter to establish the diagnosis by the examination of the pus or tissue. (The use of a 1 to 10% solution of potassium hydrate will make the distinguishing features of the organism stand out.)

In most of their cases in which systemic symptoms preceded the appearance of the abscesses, there were indications of pulmonary, gastro-intestinal or renal disease, and in several, blastomycetes were demonstrated in the feces, urine or sputum. They are less difficult of demonstration than the tubercle bacilli.

In every case of the formation of multiple abscesses with symptoms of a general pyemia, as well as in cases of what appears to be atypical tuberculosis, the possibility of infection with blastomycetes should be considered. Of their twenty-two cases, two have recovered, seventeen are dead and three are failing rapidly and probably can live but a few weeks.

The treatment, they believe, should consist of large doses of potassium iodide, tonics, hygienic measures and possibly a change of climate. The local lesions are best treated by local antiseptics (a 1% solution of copper sulphate is one of the best) and with x-rays.

They also discuss the relation and differences of this disease and coccidioidal granuloma.

2. Peters offers a number of conclusions from a series of 100 cases of tuberculosis observed at the New Mexico Cottage Sanatorium, which is situated at an elevation of 6,000 feet.

(1) He finds that the blood pressure is raised by residence in high altitudes, and he believes this may serve to explain a portion of the uses of climate in the treatment of tuberculosis.

(2) He finds that there is little, if any, relation between blood pressure and pulse rate.

(3) That the degree of involvement and the blood pressure bear no necessary relation to each other. The pressure tends to increase as the pulmonary condition improves.

(4) That the blood pressure is increased in pulmonary hemorrhage, and (5) that the blood pressure in tuberculosis is far more reliable as a prognostic than a diagnostic sign.

3. Mayer and Proescher report a series of cases in which they tried the serum reaction of syphilis. Their technic was essentially that of Wassermann and Sachs and Altmann. Their results show 75% of suspected cases positive.

4. Lavenson gives an account of a case of acute insufficiency of the suprarenals and a discussion and summary of the literature on the subject. His case presented the following clinical picture. Sudden onset of vomiting and epigastric pain in a woman of forty-four years, in comparatively good health. Tenderness in the lumbar region, increasing signs of shock and death in thirty-six hours.

Autopsy showed acute hemorrhagic necrosis of the suprarenals, which the author believes in his case to be due to thrombosis of the suprarenal veins from an extension of an acute suppurative process in the pancreas which had been for some time the seat of a chronic pancreatitis. The author finds, to account for this condition of insufficiency of the suprarenals, practically only two conditions, hemorrhage and so-called acute adrenalitis or acute necrosis of the suprarenal with hemorrhage.

He discusses at length the causes of these conditions and cites a number of cases where the cause seems more or less evident.

He finds that the reported cases may be grouped according to symptoms under five general types:

(1) Cases of sudden onset with epigastric pain and tenderness, vomiting, profound prostration, feebleness and rapidity of pulse, coldness of extremities, lumbar tenderness and at times diarrhea and abdominal distention, followed within a few days by death.

(2) The asthenic type, in which the predominant feature is a profound asthenia ending within a few days in death.

(3) The nervous type, in which the predominant features have been either convulsions or coma or a typhoid state.

(4) Cases of sudden death, as in stillborn infants.

(5) Cases occurring in association with a purpuric eruption or hemorrhages into the abdominal viscera.

6. Pearce presents a review of the experimental work which has been done to determine the relation of the more

important manifestations of chronic nephritis, as vascular hypertension, heart hypertrophy, uremia and edema, to the renal lesion itself. He considers at length the arguments for and against an internal secretion in the kidney and reports a number of experiments of his own along these lines. [W. B. R.]

Journal of Medical Research.
July, 1908.

1. *Gay, F. P., and Southard, E. E. *On Recurrent Anaphylaxis and Repeated Intoxication in Guinea Pigs by Means of Horse Serum.*
2. *Gay, F. P., and Southard, E. E. *The Relative Specificity of Anaphylaxis.*
3. *Gay, F. P., and Southard, E. E. *The Localization of Cell and Tissue Anaphylaxis in the Guinea Pig, with Observations on the Cause of Death in Serum Intoxication.*
4. *Anderson, J. F., and Rosenau, M. J. *Further Studies upon Anaphylaxis.*
5. *McConnell, G. *Epidermal Fibrils in the Classification of Malignant Tumors.*
6. Gay, F. P. *Apparatus of Service in Experimental Pathology.*
7. *Abbot, M. E. *Statistics of Congenital Cardiac Disease.*
8. *Foster, G. B. *A Study of the Eosinophilic Cell as Occurring in the Hematopoietic Organs in Diphtheria and Tuberculosis.*
9. *Frothingham, C. J. *The Viability of Proteolytic Enzymes in Tissues.*
10. Ohlmacher, A. P. *Pseudodiphtheria Bacillus Infections and their Response to Therapeutic Inoculations.*
11. Ohlmacher, A. P. *Reaction of Hypersusceptibility as Produced by Bacterial Inoculation.*
12. McFarland, J. *Papilliferous Cysts of the Kidney.*
13. *Thompson, R. L., and Leighton, W. E. *The Results of Chronic Parathyroiditis as Obtained by Ligation of the Parathyroid Glandules in the Dog.*
14. Thompson, R. L., and Harris, D. L. *A Consideration of the Pathological Histology of the Parathyroid Glandules and a Report of a Parathyroidlike Tumor.*
15. *Wolbach, S. B. *Multiple Hernios of the Cerebrum and Cerebellum, due to Intracranial Pressure.*
16. *Bergey, D. H., and Deehan, S. J. *The Colon Aerogenes Group of Bacteria.*
17. Browning, C. H. *On the Nature of the Opsonins of Normal and of Immune Sera and on Opsonic Effects resulting from the Combined Action of Immune Body and Complement.*
18. Riesman, D., and Bergey, D. H. *A Clinical and Bacteriological Study of a Case of Pyelonephritis.*
19. *Gay, F. P. *A Contribution to the Forensic Value of the Musculo-Precipitin Test.*

1, 2, 3. Gay and Southard report on their further studies in anaphylaxis. Under (1) they present a number of experiments to show that a sensitive animal intoxicated with a large dose of serum and recovering, and thereby passing into a refractory state, by the same mechanism again becomes sensitive to the toxic effect of horse serum. They suggest the possibility of an analogy between this form of recurrent hypersusceptibility due indirectly to an intoxication and the evidence of repeated intoxication in some diseases characterized by crises, or repeated attacks, such as general paresis, epilepsy and purpura. Under (2) they show that the anaphylaxis in guinea pigs caused by the previous injection of any one of the protein substances, horse serum, egg white or milk, is only relatively specific, and illustrate the variation in the effect by the change of sequence of the administration of these substances. Under (3) they show that 85% of guinea pigs after sensitization with horse serum and intoxication by a second dose of horse serum, exhibit macroscopic hemorrhage in one or more organs. The stomach leads the other organs in frequency of involvement. The cause of death, where it occurs, is respiratory. Severe diaphragmatic spasm takes place. To explain these respiratory symptoms the authors offer an hypothesis of local tissue anaphylaxis expressed in a relatively specific sensitization of the respiratory center. All guinea pigs so far examined in the toxic phase do show focal fatty changes in many tissues. These changes are in many regions of an extremely focal character, involving often a single muscle fiber, nerve fiber or other cell as the case may be.

4. Anderson and Rosenau present a long article on the subject of anaphylaxis; their conclusions are somewhat different from those of Gay and Southard.

5. McConnell concludes that the presence of epidermal fibrils as a method of diagnosing or classifying epithelial growths is of very limited value. These structures were not found in any growths excepting those derived from surfaces covered by squamous epithelium, such as the skin and lips, so they could not be used to differentiate epithelial tumors in general from those of mesoblastic origin. The one point of importance is in the classification of tumors arising from the epithelium of the skin and its appendages.

7. Abbot has tabulated the clinical findings in 400 cases of congenital cardiac disease where post-mortem examination established the condition.

8. Foster reports a number of observations and experiments, from which he concludes that:

(1) The occurrence of eosinophilic cells is constant in the hematopoietic organs in diphtheria and tuberculosis.

(2) The toxins of the diphtheria and of the tubercle bacillus exert a positive chemotactic action on the eosinophilic cell.

(3) The chemotactic stimulus which attracts the eosinophile is a selective one and is not possessed by all bacterial toxins, as eosinophiles were not found in the hematopoietic organs in scarlatina, cerebrospinal meningitis, anthrax, cerebellar or typhus fever.

(4) The eosinophile elaborates either sensitizing substances or antibodies, which antagonize certain bacterial products, at least the toxins of diphtheria and tuberculosis.

(5) Following intraperitoneal inoculations in guinea pigs with the diphtheria bacillus, the number of eosinophiles in the spleen varies inversely with the number found in the peritoneal fluid.

(6) In the guinea pig the eosinophile cell is phagocytic for the Klebs-Toefler bacillus.

9. Frothingham reports on his studies on the viability of the proteolytic enzyme. He investigated the enzyme, leucoproteose, found in the polymorphonuclear neutrophiles, and the enzyme, lymphoproteose, found in the mononuclear phagocytic cells. He used a modification of Müller's method. He finds that leucoproteose is inhibited but not destroyed by the presence of formalin and Zenker's solution, and upon their removal recovers its active power. Neither alcohol, freezing nor drying in hot air inhibits or destroys it.

Lymphoproteose is destroyed by Zenker's solution, is inhibited and, after a prolonged stay, is destroyed by formalin and is considerably inhibited after a prolonged stay in alcohol. Neither freezing nor drying in hot air inhibits or destroys it.

The presence of enzymes in organs and tissues requires further study in regard to their relations to the two above-mentioned enzymes.

This method may be used for helping to determine the origin of bone marrow tumors, even after the tissue has been hardened in the common preservatives.

13. Thompson and Leighton have made a number of experiments on dogs in which the parathyroid glands were tied off sometimes at one operation and sometimes after several operations.

Following the gradual destruction of the parathyroid glandules in the dog, a train of symptoms arises, different from those obtained by parathyroid excision. After ligation of all parathyroid tissue the dog passes the time limits of tetanic death, that occurs after excision of the glandules practically without symptoms. Gradually, however, chronic symptoms, trophic in nature, arise. These consist of gradual but progressive loss of weight and strength; greatly diminished resistance to infection and a final stuporous condition ending in death without tetany.

These nutritional disturbances are as marked when the thyroid is not injured as they are when the thyroid is removed on one side.

15. Wolbach reports on the study of nine cases of multiple herniæ of the cerebrum and cerebellum. These cases occured in nine consecutive cases of increased intracranial pressure which came to autopsy.

The series of cases practically proves the constancy of multiple herniæ of the cerebrum and cerebellum in cases of increased intracranial pressure.

Two types of herniæ are distinguished: those rapidly produced by sudden increase of pressure, such as voluminous cerebral hemorrhage, and those produced slowly by gradual increase in pressure, such as accompanies intracranial tumors.

The article contains a careful description of the herniæ and their relation with the arachnoid villi.

16. Bergey and Deehan present a very carefully worked out study of the colon aerogenes group of bacteria and a method of classification of the various members of this group.

19. Gay gives an interesting account of the use of the musculo-precipitin test in detecting a case of breaking the game laws. [W. B. R.]

Deutsche Medizinische Wochenschrift. No. 33.

Aug. 13, 1908.

1. Fritsch. *Old and New Obstetrics.*
2. Schilling, C., and v. Hoesslin. *Fixation of the Complement in Trypanosomiasis.*
3. Pochhammer, K. *The Pathogenesis of Local Tetanus.*
4. *Pinkus, F., and Pick L. *The Structure and Origin of Symptomatic Xanthoma.*
5. Noury Pascha, Z., and Haidar, Bey. *Anthrax of the Tonsil.*
6. Schaefer. *A Case of Intermittent Hydronephrosis cured by Plastic Operation.*
7. *Bab, H. *Conception, Menstruation and the Calculation of Pregnancy.*
8. Goldschmid, E. *Obituary on Eugene Albrecht.*

4. The various forms of xanthoma are characterized by a definite type of cell containing a substance which has been supposed to be fat. Stoerk showed that for the neoplastic variety of xanthoma this substance was not fat but a lipoid body with double refraction, as shown by the polarization microscope. Pinkus and Pick have investigated the various forms of xanthoma and find that all of them contain this double refracting substance and not fat. They also found cholesterin present and therefore conclude that the double refracting substance in xanthoma is the cholesterin ester of a fatty acid. This makes clearer the genesis of symptomatic xanthoma in diabetes and diseases of the liver associated with jaundice, for it is known that the cholesterin in the blood is much increased in both of these conditions.

7. Bab reports three cases in support of the theory of Löwenhardt and Sigesmund that conception takes place at the time of the ovulation *following* the last menstruation. The first absent catamenia are suppressed because conception has occurred at the time of ovulation a few days previously. The fact that the fruitful coitus usually occurs in the first twelve days after menstruation may be due to the fact that the cervical mucous membrane is not swollen at this period, and it is, therefore, easier for the spermatozoön to enter the uterus. [W. T.]

Münchener Medizinische Wochenschrift. No. 34.

Aug. 25, 1908.

1. Hegar, A. *The Diffusion, Cause and Prevention of Narrow Pelvis.*
2. Dietlen, H. *Orthodiagraphic Investigations on Pathologic Heart Forms and the Condition of the Heart in Emphysema and Asthma.*
3. Hoepffner, C. *The Advantages of the Purified Extract of Digitalis.*
4. Boehm, R. *Note on Condurango Bark and Kawar Root.*
5. Jessen, F. *The Improvement of the Tuberculin Treatment.*
6. *Bechhold, H. *Studies on Phagocytosis.*
7. Rosenberger, F. *The Relation of "Inosit" to the Animal Organism.*
8. Peters, A. *Asymmetries of Face and Skull and their Relation to Caput Obstipum.*
9. Mayer, O. *Epidemiologic Observations on Typhoid and Paratyphoid in the Palatinate during the Years 1903–1906.*
10. Solaro, G. *A New Elastic Intestinal Clamp.*
11. Saloman, O. *An Interesting Case of Quinine Poisoning.*
12. Bing, R. *The Treatment of the Summer Diarrheas in Children.*
13. Frankenburger, A. *The Question of Sanatorium Treatment and the Indications for the Same.*
14. Nagelschmidt, F. *Critic of Klingelfus' Article on "The Mensuration and Dosage of X-Rays in Absolute Units. Roentgenolysis."*

6. Bechhold has studied the effect of various substances on the phagocytic power of leucocytes. NaOH increases the phagocytic action; the presence of serum and corpuscles weakens the action of the NaOH. Lactic acid also stimulates phagocytosis, though the leucocytes undergo considerable change in composition when it is added to the solution. Carbon dioxid and illuminating gas have no influence on phagocytosis. [R. D.]

Berliner Klinische Wochenschrift. No. 34.

Aug. 24, 1908.

1. Ziehen. *Relations between Congenital Muscular Infantile Defects and Infantile Progressive Muscular Dystrophy.*
2. Maschke. *Two Cases of Multiple Encephalitis in Meningococcus Meningitis.*
3. Melchior, E. *Multiple Peritoneal Pseudo-Metastases of an Ovarian Dermoid.*
4. Fabian, R., and Knopf, H. *Further Results of the Conjunctival Reaction in Tuberculosis.*
5. Boas, H., and Hange, G. *The Fixation of the Complement in Scarlet Fever.*
6. Einhorn, M. *A Simplification of the Jakoby-Solius Ricin Method of Pepsin Determination.*
7. Forster, E. *Corporal Punishments in School.*
8. Böhm, M. *Recollections of America.*

No. 35. Aug. 31, 1908.

1. *Borchardt, M. *The Knowledge of Acute Gastric Dilatation.*
2. Mendel, K., and Adler, S. *The Knowledge of Meningitis Serosa Spinalis.*
3. Mayer, W. *A Further Instance of Torsion of the Gall Bladder.*
4. Askanazy, M. *The Occurrence of Glandlike Lumina in the Cell Complexes of the Suprarenal Capsules.*
5. Meissner, P. *The Use of Europhen.*
6. Frugoni, C. *Adrenalin-Glycosuria and its Treatment by the Extract and Juice of the Pancreas.*
7. Rabinowitsch, S. S. *Contribution to the Diseases of the Conus Medullaris.*
8. Lossen, W. *Observations on Resections of the Elbow with Preservation of Mobility.*

1. Borchardt describes a case in which, after nephropexy, all the symptoms of a fulminating peritonitis set in. At operation, however, no peritonitis was found. The condition was that of an enormously dilated stomach, with a duodenal ileus. At autopsy the stomach almost filled the abdominal cavity. The author believes the ileus is usually secondary to the acute dilatation, following operation, as in this case. Thin, badly nourished people with enteroptosis are more likely to have this condition. The most effective treatment is early and continued gastric lavage. [R. D.]

Die Therapie der Gegenwart. Heft 8.

August, 1908.

1. Eulenburg, A. *The Treatment of Neurasthenia.*
2. Schnütgen. *Sarason Baths in Arteriosclerosis.*
3. Sternberg, W. *The Fundamentals of Diet in Cooking for the Sick.*
4. Reilingh, D. deV. *The Action of the Frenkel Exercise Treatment for Tabes Dorsalis on the Centripetal Peripheral Neuron.*
5. Hoepfner, T. *The Bearing of Certain Statutes on Stuttering.*
6. v. den Velden, Fr. *The Interrelation of Disease.*
7. Hirschfeld, H. *The Newer Views on Normal and Pathologic Blood Regeneration and Their Significance in the Treatment of Blood Diseases.*

Correspondence.

THE INTERNATIONAL CONGRESS ON TUBERCULOSIS.

Office of Massachusetts State Committee:
309 Ford Building.

Boston, Mass., Sept. 23, 1908.

Mr. Editor: I enclose you a copy of a little editorial in the *Journal of the Outdoor Life.* I think the fact which is pointed out, that the books which will be obtained by any one who procures membership in the International Congress on Tuberculosis will be worth many times the price of membership, is a good one.

"The International Congress on Tuberculosis, which will take place from Sept. 21 to Oct. 12, ought to be of interest to everybody, not only from the standpoint of the general good that will be accomplished, but also on account of the special information that will be disseminated. This special information will be contained in the volumes of the 'Transactions of the Congress,' which will be sent to all members shortly after the Congress. It will not be necessary, therefore, to attend the Congress to derive special benefits from it.

"These transactions, which will require four or five volumes, will comprise the following: One volume will contain the special lectures by foreigners who have been particularly invited by the Congress. These lectures will deal with subjects on which the lecturers have spent years of work and sometimes their whole lives. Other volumes will contain all the original papers read at the Congress. These papers will deal with practically every phase of tuberculosis, namely, its cause, the way this cause enters the body, the reason why some people are susceptible to tuberculosis and some not, the methods of preventing tuberculosis and the cure of tuberculosis. The remaining volumes will contain the discussions in connection with these original papers.

"In other words, this set of books will contain practically all the modern ideas on tuberculosis. To any one who has tuberculosis, or who is interested in tuberculosis, this set will be of inestimable value. The ordinary price of such a set of volumes would be at least $15, yet $5 procures it, as well as a membership in the Congress. Three volumes of the British transactions recently sold for $19, and after this Congress adjourns it will be as difficult or even impossible to obtain the records of its proceedings." *Journal of the Outdoor Life*, September, 1908.

The membership for Massachusetts is yet far below what it ought to be, and I think that it should be pointed out to the profession that even if they are unable to attend the Congress, it is well worth while to join it.

Very truly yours,
Arthur T. Cabot, M.D.,
Chairman Massachusetts State Committee,
International Congress on Tuberculosis.

SOCIETY NOTICES.

New York and New England Association of Railway Surgeons. — The eighteenth annual meeting of the New York and New England Association of Railway Surgeons will be held at the Academy of Medicine, New York City, on Nov. 17 and 18, 1908, under the presidency of Dr. F. A. Stillings, of Concord, N. H.

The entire morning session of the first day will be devoted to a symposium of the following subject, "What are the Causes leading to Railway Accidents and What Remedies can be Suggested?"

Geo. Chaffee, *Secretary,*
338 47th St., Brooklyn, N. Y.

Medical Society of Virginia. — The thirty-ninth annual meeting of the Medical Society of Virginia will be held at Richmond, Va., Oct. 20-23, 1908.

Massachusetts Medico-Legal Society. — The fall meeting of the Massachusetts Medico-Legal Society will be held in Sprague Hall, Boston Medical Library, on Wednesday, Oct. 7, 1908, at 1 p.m.

The following papers will be read and discussed. 1. "The Work of the Medical Examiner," Hon. Thomas E. Grover, District Attorney. 2. "How Far may the Medical Examiner properly go in employing Expert Assistance?" Dr. W. N. Cowles, of Ayer. 3. "A Gunshot Wound of the Head and a Study of the Bullet," Dr. Charles W. Bartlett, of Marshfield.

Oliver H. Howe, M.D., *Recording Secretary.*

RECENT DEATHS.

Walter Thomas Clark, M.D., M.M.S.S., of Worcester, died in Portland, Me., Sept. 24, 1908, aged forty-six years.

Dr. Milard Heath, a retired physician of Hackensack, N. J., died on Sept. 22, at the age of sixty-five years. For the last eighteen years he had been a justice of the peace.

Dr. John A. Hegeman, formerly of New Jersey, died at his home in New York on Sept. 23, at the age of fifty-six years. He was graduated from Princeton University in 1876, and three years later received the degree of M.D. from the College of Physicians and Surgeons, New York. He practised in Passaic, N. J., until three years ago, when, on the death of his wife, he removed to New York and engaged in commercial pursuits.

BOOKS AND PAMPHLETS RECEIVED.

Contributions to the Physiological Theory of Tuberculosis. By Charles Creighton, M.D. Illustrated. London: Williams & Norgate. 1908.

A Text-Book of Human Physiology. Theoretic and Practical. By George V. N. Dearborn, A. M. (Harv.), Ph.D., M.D. (Col.) Illustrated. Philadelphia and New York: Lea & Febiger. 1908.

The Problem of Age, Growth and Death. A Study of Cytomorphosis, Based on Lectures at the Lowell Institute, March, 1907. By Charles S. Minot, L.L.D. (Yale, Toronto). D.Sc. (Oxford). Illustrated. New York and London: G. P. Putnam's Sons. 1908.

Hay Fever, Hay Asthma, Its Causes, Diagnosis and Treatment. By William Lloyd. Second edition. Illustrated. London: Henry J. Glaisher; Chicago: W. T. Keener & Co. 1908.

Hygiene for Nurses. By Isabel McIsaac. Illustrated. New York: The Macmillan Co. 1908.

RECORD OF MORTALITY

For the Week ending Saturday, Sept. 19, 1908.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	6	2
Chicago	525	169	Waltham	6	1
Philadelphia	425	133	Pittsfield	—	—
St. Louis	—	—	Gloucester	—	—
Baltimore	167	48	Brookline	2	—
Cleveland	—	—	North Adams	1	1
Buffalo	—	—	Chicopee	4	0
Pittsburg	—	—	Northampton	3	1
Cincinnati	—	—	Medford	1	1
Milwaukee	—	—	Beverly	1	1
Washington	—	—	Leominster	—	—
Providence	—	—	Hyde Park	2	—
Boston	221	100	Melrose	2	1
Worcester	40	14	Newburyport	—	—
Fall River	39	22	Woburn	3	2
Cambridge	27	14	Westfield	3	—
Lowell	36	17	Marlboro	4	0
Lynn	19	9	Revere	5	2
New Bedford	29	16	Attleboro	3	2
Springfield	23	7	Peabody	—	—
Lawrence	23	12	Adams	7	2
Somerville	14	1	Clinton	8	2
Brockton	11	6	Gardner	4	2
Holyoke	18	6	Milford	—	—
Malden	7	1	Watertown	0	—
Chelsea	7	2	Plymouth	—	—
Newton	10	2	Weymouth	6	0
Salem	12	5	Framingham	1	—
Haverhill	8	1	Southbridge	—	—
Fitchburg	12	9	Wakefield	—	—
Everett	3	1	Webster	—	—
Taunton	15	6	Arlington	5	3

Original Articles.

TUMORS OF ADRENAL ORIGIN, WITH PARTICULAR REFERENCE TO HYPERNEPHROMA OF THE KIDNEY.*

BY HERBERT C. MOFFITT, M.D., SAN FRANCISCO, CAL.

In accepting the flattering invitation of your councilors, it seemed to me best to deal with ground that is yet debatable, with a territory still open to the physiologist and pathologist, as well as to the physician and surgeon. Those of you who have read the recent interesting paper of Schæfer[1] realize how much still remains to discover in regard to the functions of the adrenals. The work of Oliver and Schæfer firmly established the fact that the medullary portion of the adrenal elaborates an active principle with remarkable influence upon arteries and blood pressure. We know since the time of Addison that disease of the adrenals may at times lead to a well-defined symptom complex, with profound asthenia as the most characteristic, and pigmentation as the most striking, feature. But extensive tuberculosis of the adrenals or bilateral malignant growths may be found without pigmentation, and we are still unable to say how large a rôle involvement of the sympathetic may play in its production. The question of the relations of the adrenals and the "chromaffine system" is a new and interesting one. Schur and Wiesel[2] discuss its various phases in a recent paper.

Of the functions of the cortex almost nothing is known although it is the most constant part of the gland throughout the vertebral kingdom. It is supposed to neutralize certain toxines of metabolism and to have influence on the growth and functions of the sexual glands. Schæfer ends by saying, "The cortex of the suprarenals may yield a hormone which influences the growth and nutrition of certain tissues and organs. One might even be permitted to suggest that the integumentary tissues and the generative organs, with the relative development of which it is manifestly correlated, are directly under its influence."

The cortical and medullary portions are developed from different "anlagen," and, according to Vincent, "in elasmobranch fishes are represented by two distinct sets of glandular organs." The cortex is developed from the genital epithelium of the celum, and the medulla from the same blastema as the sympathetic ganglia. It is interesting to note that in malformations of the brain —failure of frontal lobes to develop, hemicephalia, microcephalia, cyclopia — aplasia or hypoplasia of the adrenals is the rule. Czerny[3] has noted hypoplasia in a number of cases of hydrocephalus congenitus. In monsters without sexual organs the adrenals are nearly always absent.

The importance of accessory adrenals has gradually received due clinical recognition since the papers of Grawitz[4] in 1883 and 1884. They are found chiefly under the kidney capsule, but may be widely scattered — in the broad ligament, ovary, testicle, epididymis, in the renal or solar plexus, along the spermatic vessels or in the liver or pancreas. They may be the starting points of growths benign or malignant, and it is now generally conceded that the great majority of malignant renal tumors has origin in these aberrant cells. Birch-Hirschfeld, in 1896, gave the name "hypernephroma" to all tumors springing from adrenal rests, and it is with the clinical vagaries of hypernephroma of the kidney that this paper will have almost exclusively to deal.

Case I. In 1899 a boy of fourteen entered hospital with complaint of pain in the left loin and down the front and back of the left thigh. He had been ill a few months and in the last weeks had begun to cough, had lost weight rapidly and had had sweats and fever. On examination there were found areas of consolidation in both lungs; the sputum was occasionally bloody but contained no tubercle bacilli; there was irregular temperature. In the left hypochondrium and to the left of the vertebral column was an irregular tender mass difficult to palpate on account of muscular rigidity. The left thigh was somewhat atrophied. There was no evidence of vertebral disease. The urine was negative. A most striking feature was the extremely marked general arteriosclerosis for which none of the usual causes could be demonstrated. It was this sign that led to the suspicion of a hypernephroma as possible cause of the symptoms rather than tuberculosis, which was the diagnosis chiefly weighed. Death took place with increasing pulmonary signs, and autopsy showed a hypernephroma of the left kidney as big as an apple, with rupture through the capsule and involvement of the retroperitoneal glands, the left side of the sacrum and ileum, and with numerous metastases in the lungs. The aorta and other arteries were markedly atheromatous; the heart was very slightly hypertrophied. With the absence of lead poisoning, syphilis or kidney disease, there seemed no doubt that the arterial changes must be referred to some influence of the tumor. Neusser has called attention to the possibility of this action in hypernephromata. Widal and Bordin[5] reported an instance of atheroma and high blood pressure in a woman of thirty-six, which they thought due to multiple adenomata of both suprarenals, and Parke Weber,[6] a case of "symmetrical adenomata or nodular hyperplasia of the suprarenal glands and extreme sclerosis of the aorta and coronary arteries." Vaquez has recorded a similar observation, Ochsner[7] has noted the tendency to brain hemorrhage in hypernephromata, and Sippy has seen 4 cases with high pulse tension; one man suffered from persistent headache until the tumor was removed. In a man of forty-seven, seen last year with hypernephromata of the kidney, the blood pressure was 175 systolic and 120 diastolic (Erlanger). More attention should be given to the condition of the arteries in future and to the heart muscle, which Israel and Albrecht believe to be injured by toxines entering the inferior vena cava from the tumor in cases of direct extension into the vein.

Irregular temperature with sweats was noted above. It is not a common symptom and was recorded in 13 of 379 cases of kidney tumors collected by Kuester. Wyss of Kroenlein's clinic maintains that chills frequently accompany malignant renal growths. Israel emphasizes the greater frequency of fever in primary adrenal tumor; in 9 cases he observed fever in 57%, and in his series of 100 renal tumors it occurred in but 1% or 2%.

Case II. In 1899 a woman of about sixty was frequently examined in hospital on account of interesting nervous symptoms. She was demented and very little could be made of her history. She seemed to have occasional headache and was totally blind as the result of a secondary optic atrophy. There were several attacks of transient hemiplegia over a period of a few months, first on one side and then on the other. She was evidently aphasic as well as demented, but the type of aphasia could not be determined. Physical examination was negative, and the urine showed nothing but the slight trace of albumin and few casts to be expected at her age. Despite her age, the most probable diagnosis was thought to be cerebral syphilis or paralytic dementia. One morning she was found dead in bed, and autopsy showed a tumor the size of an orange lying between the two hemispheres anteriorly and invading both frontal lobes. From the variegated yellow and red areas of the specimen, it was at once recognized as of probable adrenal origin, and a hypernephroma the size of a walnut was found in the upper pole of the left kidney. Kolisko has called attention to the relative frequency of metastates in the brain from these tumors. Albrecht cites a case in which an attempt was made to remove a brain tumor regarded as primary, and in which autopsy showed a hypernephroma.

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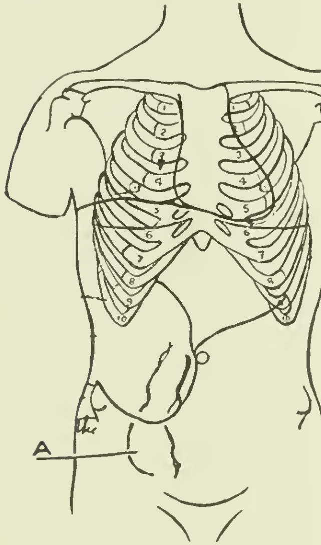
* Read before the Oregon State Medical Association, July 2, 1908.

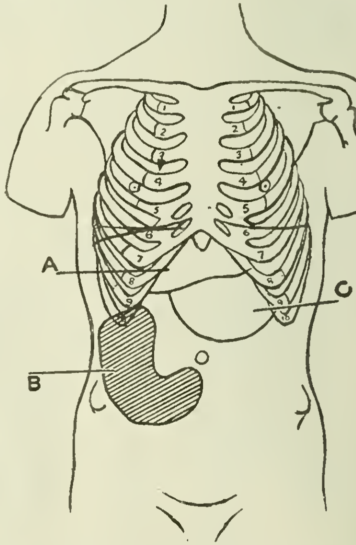
Case III. In 1902, a man of forty-two came to me with the probable diagnosis of echinococcus of the liver rupturing into the kidney pelvis. The history was a fairly typical one of hypernephroma, however, and the enlargement of the liver could be readily explained. Off and on for six years there had been slight pain in the right hypochondrium and lumbar region; this had first been noticed after a race, which had exhausted the patient and made him faint. Two years before there had been a violent attack of colicky pain in the right side called renal colic, and accompanied by hematuria. Subsequent to this there had been frequent periods of hematuria with and without pain. In the last year there had been much loss of weight and strength. The patient was pale and cachectic, there were no large glands nor was there any evidence of metastases. The arteries were not atheromatous, and examination of the heart was negative. Free HCl was present after a test meal. The blood count showed 3,200,000 red cells, 11,000 leucocytes and Hb 45%. The urine averaged 1,500 to 2,000 ccm. daily, specific gravity 1,020 to 1,027, albumin a trace, many leucocytes and a few red cells in the sediment. Repeated search was made for tumor fragments with negative results. Dr. Jellinek,[8] who has since reported the case, concurred in the diagnosis of hypernephroma, and the patient was sent to Heidelberg and operated upon by Czerny. A tumor the size of a man's head was with difficulty enucleated, being firmly bound to the under surface of the liver, which it had rotated downward and to the left. A portion of the tumor extended into the renal vein and cava. There was thrombosis of the right femoral vein after operation. Five months after operation the man was seen with metastases in the tenth and eleventh dorsal vertebræ and local recurrence in the abdomen. He died three months later. The only element of confusion in the case was the relation of the enlarged liver to the main tumor mass. It is not infrequent in large tumors of the kidney to have compression and distortion of the right liver lobe with some rotation of the entire organ and enlargement of the left lobe.



Tumor in Case III.

A. Colon. No varicocele. Right hypochondrium and lower recess formed by kidney, the liver being pushed to the left.

Case IV. In March, 1906, through the kindness of Dr. Charles G. Levison, I had opportunity to examine a man thirty-eight years of age, who entered hospital on account of a lump he had noticed in the right side of the abdomen. The following history and examination are from the notes of Dr. Bine. Family history, negative. Malaria many times, a mild typhoid four years ago, gonorrhea six years and syphilis five years before. Two years before he had been salivated while working in a mercury mine. Five months ago he noticed a hard lump the size of a walnut between the margin of the ribs and the right hip-bone. It was not painful nor tender, and



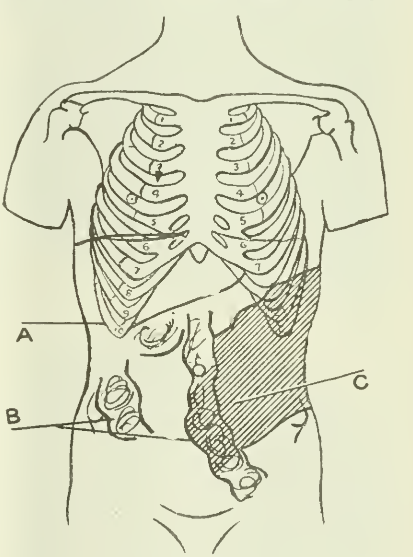
Tumor in Case IV.

A. Liver. *B*. Freely movable tumor that can be pushed upward under ribs down into pelvis and to the left across the median line. It moves freely on inspiration but can be held down on expiration. The upper part is larger, more irregular and more oblong, the lower rounded and more elastic. *C*. Stomach tympany.

he noticed it only accidentally in turning around during lifting. On questioning he remembered that a month before this he had fallen from a staging some ten feet high, upon his back, and a man fell on top of him. No bad result followed the fall, and he had completely forgotten it. The tumor has steadily grown since then, but has given no symptoms apart from slight constipation. It has seemed to grow forward and inward from the right flank. He thinks after taking physic the mass gets somewhat smaller, but next day is about the same. No change has been noted in the stools, urine or digestion. He has lost 20 lb. in the last year. The chief interest lay in examination of the tumor. The man was not cachectic, there were no glands, varicocele was not present; the arteries were moderately thickened, but syphilis could readily account for their condition. The blood count was normal, 4,800,000 red cells, no leucocytosis. There was no abnormal pigmentation. There was an occasional trace of albumin in the urine and at times a few hyalin and granular casts. Red cells were found only after manipulation of the tumor. There were numbers of epithelial cells apparently of renal type found occasionally. Dr. Levison catheterized the right ureter and noted the urine dropping in apparently normal manner. Fluoroscopic examination showed the diaphragm in normal position and descending as usual. An x-ray plate gave a shadow along the ascending colon. From the shape and relations of the tumor it was held to be of renal origin and probably a hypernephroma. Dr. Levison operated March 24, 1906, and removed the tumor through an anterior incision. The inner lower portion of the mass was formed by the lower two thirds of the right kidney, which had been pushed downward and inward. The upper part was an irregularly rounded nodular growth springing from the upper pole of the kidney and about the size of an orange. The colon was adherent along the lower border, but was readily separated. The patient recovered quickly and was seen last in October, 1906, seven months after the operation. He was doing laboring work, had no symptoms, and on examination showed no signs of recurrence. Macroscopically and microscopically the tumor was a typical hypernephroma.

Case V. March 23, 1907, a man of forty-seven, a salesman, was sent me for examination by Dr. W. I. Terry. His family and personal history was good. Apart from several attacks of malaria, the last twelve years ago, he had never been ill. He was perfectly well until March 15, eight days before. While in the dentist's chair he had severe pain in the left lumbar region with radiation into the hypochondrium and scrotum. The attack of pain lasted four hours, and two hours after it was over he passed a small amount of bloody urine with two long wormlike clots. The next urine was clear, and he has had no return of the pain or bleeding. He had not noticed any swelling of the abdomen, but, on questioning, remembered that he had remarked a left-sided varicocele some four months before. The patient looked slightly anemic but not cachectic. Weight 149 lb., normal weight 154. There was a slightly yellowish smoky hue of the face and chest and numerous yellowish warty patches were scattered over the abdomen; there was a pigmented hairy mole the size of a dime beneath the right rib border. There were 4,608,000 red cells, 10,000 leucocytes, with differential count of polynuclears 83.5%, lymphocytes 11.5%, large mononuclears 5% and eosinophiles 0%. Hb was 70%. The urine showed a faint trace of albumin, no casts, and occasional red blood cell and leucocyte. The palpable arteries were decidedly hard and thickened, the temporals being unusually tortuous. Blood pressure was 175 and 120 (Erlanger). There was a small round cystic swelling in the right epididymis, and a very marked varicocele on the left side, which had developed in the last four or five months. This was absolutely painless, soft and did not disappear on lying down. A diagnosis of hypernephroma of the kidney was made by Doctor Terry and myself, and on March 27 the patient was operated upon by Doctor Terry, who dictated the following description of the procedure:

"A Morris incision on the left side began about 2 cm. outside the quadratus lumborum and extended forward and downward to the level of the anterior superior spine. This necessitated division of the external oblique muscle. The peritoneum was pushed forward and the kidney tumor removed after much difficult dissection. The tumor and kidney measured 18 x 10 x 8 cm., and was densely adherent at the upper border. The vessels were ligated high up, and on account of the high position of the tumor, the tips of the tenth and eleventh ribs were divided subperiosteally and the diaphragm raised with retractors. Most of the capsule was removed and the ureter was stripped downward, almost to the bladder, and cut short after carbolizing the end. The vessels were large, but not occluded by the tumor mass, and were ligated by Pagenstecher. The peritoneum was opened at the upper end of the incision, but was easily closed with continuous catgut sutures. The hemorrhage was fairly severe from the capsule, but was readily controlled. The remnant of the capsule was stitched with catgut and a cigarette drain inserted in the space. Muscles sutured with chromicized gut, skin with silkworm gut and continuous plain catgut. Sterile gauze dressing.

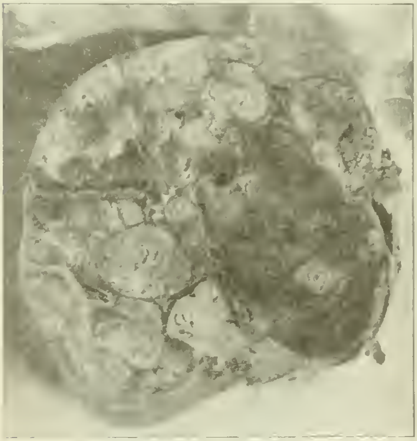


Tumor in Case V.

A. Right kidney not felt. *B.* Colon. *C.* Irregular hard mass with nodular surface and rounded edge without notches, an elastic prominence which has the general shape of the kidney. The tumor mass goes back into the flank and can be felt to the left of the vertebral column. The colon lies along the inner margin and only slightly overlaps it on distention.

"A section of the mass showed the cortex of the kidney surrounding a mass of yellowish tissue, evidently typical hypernephroma, which is located in the pelvic and internal aspect of the kidney. The cortex is very much elongated and covers the mass completely. There is no evidence of tumor masses breaking through the kidney. The projection on the lower pole, thought on examination to be part of the kidney, is due to a mass of tumor. Microscopical examination confirmed the diagnosis of hypernephroma."

The patient left the hospital four weeks after in good condition. He was examined the last time three days ago, fifteen months after the operation. He has been at work regularly, feels perfectly well, and has gained 10 lb. The left varicocele disappeared very soon after the operation, but for four months he has noted moderate enlargement of the *veins* in the right side of the scrotum. His color is certainly less yellowish and smoky, and the urine shows no albumin. The lower pole of the right kidney can be plainly palpated. No explanation can be found for the right-sided varicocele, but its presence casts doubt upon the future prognosis. The increase in size of the right kidney can be accounted for by compensatory hypertrophy. The arteries seem less hard than on first examination, and blood pressure is now 140 and 110.



Tumor in Case V.

Case VI. The following history of a man about fifty in my service at St. Luke's Hospital in 1906 contrasts with the last three fairly typical cases. Unfortunately the fire destroyed accurate notes, and the description is from memory. The patient was brought in delirious with a history of illness for three or four weeks, which had been marked chiefly by pain in the belly and back. He lived only five days after entering hospital. Delirium was a constant feature. There was irregular temperature, reaching 102° at times. There was no emaciation or cachexia. There seemed to be great pain in the hypochondrium and in the back at a level of the sixth, seventh and eighth dorsal vertebræ. There was a moderate projection of the sixth and seventh dorsal spines and great tenderness here and over the lower right ribs in the back. The abdomen was distended and could not be palpated on account of the great muscular rigidity and tenderness. There was no free fluid. The right lung showed areas of consolidation in the upper lobe and intense dullness below the scapular angle. The urine was negative. Eyegrounds were negative. Blood count showed no leucocytosis. There was marked rigidity of the entire spine, and bilateral Kernig's sign and Babinski. A lumbar puncture gave very little fluid with very few cells. The case was regarded as probably one of tuberculosis of the lung, pleura, peritoneum and spine, although the appearance of the patient was decidedly against it. The possibility of a tumor with metastases was considered, but could not be proved. Death occurred before an x-ray plate could be taken.

Autopsy showed a large hypernephroma of the right kidney. There were metastases in both lungs, chiefly the right one, and a few nodules in the liver. The dullness at the right base was caused by the pushing up of the enlarged liver by the tumor. There were metastases in the eighth, ninth and tenth ribs on the right side with a fracture of the ninth rib. This would have undoubtedly shown on an x-ray plate. Metastases in the vertebræ had led to the deformity noted clinically. The brain was not examined.

The case illustrates what Albrecht [9] has particularly emphasized: that with evidence of bone disease or tumors in an adult the possibility of hypernephroma metastases should be considered. The conjunctival tuberculin reaction can be used in cases with fever, and x-ray plates and functional examinations of each kidney will help in differentiation, even if the renal tumor cannot be felt.

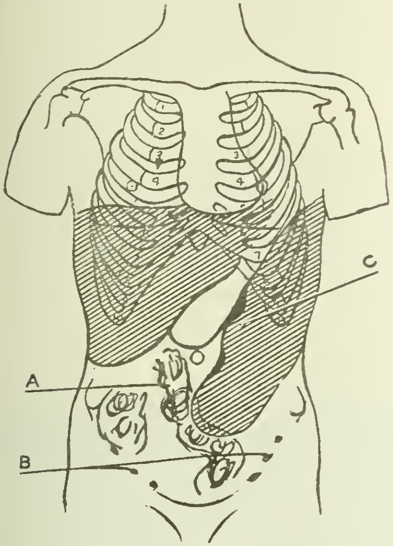
The following two cases illustrate what Leube has dwelt upon,— the danger of changing a well-considered diagnosis on evidence, striking but insufficient, that is brought by late symptoms or signs.

Case VII. In August, 1904, a man of thirty-four was sent to me for an opinion as to the nature of a splenic enlargement that had been noted four months previously. The family history was good. At the age of eighteen months he had a severe attack of epidemic meningitis, but had recovered perfectly. He had been a painter for nine years, but had never had symptoms of lead poisoning. His habits were excellent and there was no history of venereal disease.

The present illness began with pain in the left hypochondrium and a tumor thought to be spleen was found at that time. Pain was relieved by painting with iodine and the patient was not seen until a month ago, when the tumor was found to be much larger. During the past month, under Fowler's solution, the tumor had become smaller, and there had been no pain in the left side, but some aching over the liver and pain in the right shoulder.

Examination, Aug. 25, 1904, showed considerable emaciation and some suggestion of cachexia. He had lost nearly twenty pounds in weight. There were glands the size of a pigeon's egg in both groins. On the left side was a very large varicocele, which had been observed soon after the first attack of pain. Since its appearance, he had some aching in the scrotum, groin and left thigh. The urine showed a very faint reaction for albumin with Spiegler's reagent and a few hyalin and granular casts but no red cells. Blood count was normal, leucocytes 10,000, with polynuclears 83%, lymphocytes 9.5%, large mononuclears 6.5%, and eosinophiles .5%. The arteries were definitely changed but the man had worked with lead for years. There was no fever. There was moderate edema of both legs.

The tumor was regarded in the beginning as of renal origin on account of the character of the pain, the varicocele and the deep-seated position, with ballotement from the flank and the absence of a definite sharp edge. A little later, however, diagnosis was changed to lymphosarcoma of the spleen, liver and retroperitoneal glands, largely on account of the position of the colon when inflated, which lay wholly below and to the inner side of the tumor. The course of the disease after a month's treatment with x-ray and arsenic seemed to favor the second view, as the patient felt much better and had gained 5 lb. despite the disappearance of edema. The tumor, liver, glands and varicocele seemed smaller. The improvement was of short duration, however, and death occurred four months later without further opportunity of examination.



Tumor in Case VII.

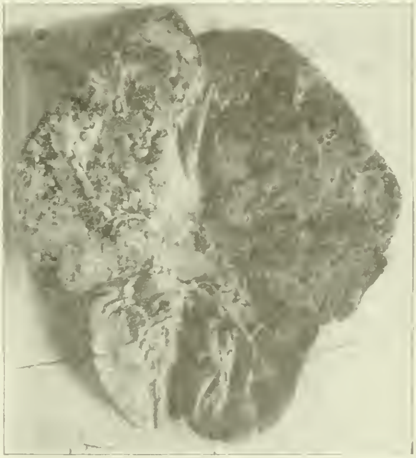
A. Colon. *B*. Hard, smooth glands. *C*. Irregular edge rounded, with nodular prominences. Moves readily on inspiration and goes deeply into flank.

Autopsy showed a large hypernephroma of the left kidney with rupture of the capsule, involvement of the retroperitoneal glands, tumor masses in the left renal vein and cava, metastases in the liver and in the right kidney.

Case VIII. The following case, with some features not yet reported in the literature of hypernephromata, was seen several times in consultation with Dr. J. M. Read during the months of April, May, June and July, 1905. A man, seventy-two years of age, had always been well until within five or six months, when he had noticed increasing weakness of both legs. His voice had been somewhat affected even before that, however, and he had not spoken plainly for two or three years. A month previous to entering hospital his left leg had suddenly given way under him, and he found soon after that both arms were weak. There had been absolutely no pain, paresthesiæ or loss of bladder control. The urine was normal and he felt well aside from the muscular weakness. On examination, April 22, 1905, he was found to be very thin but not cachectic. The nervous condition may be dismissed with a few words of description, as there was no reason clinically or at autopsy to connect it with the present illness. From a careful history it became apparent that he had had muscular atrophy in both shoulder girdles and to a lesser degree in the small hand muscles, particularly on the left side, for a long time. There were bulbar symptoms for at least a year, and the weakness and increased reflexes in arms and legs, though more marked on the left, seemed with the muscle atrophy best explained by a diagnosis of amyotrophic lateral sclerosis.

A tumor had been found by Dr. Read in the left hypochondrium, and, as a blood count showed 3,900,000 red cells and 70,000 leucocytes, nearly all of which were lymphocytes, a diagnosis of chronic lymphatic leukemia had been made. There were a few large glands in the groins; no changes were found in any of the bones. In the left hypochondrium was a long irregularly shaped tumor, which had been held to the spleen. The irregular quadrilateral shape, the rather rounded edge, the mobility from the flank and the absence of definite notches, although the edge was irregular, decided me to make the note, "The mass seems more like a kidney tumor than spleen, though it lies so low, and the blood count is against it." This view was strengthened by finding a left-sided varicocele, which the patient said appeared one year ago and was then larger than at present. It was not modified in any way by his position. A blood report, April 24, gave 4,678,000 red cells, 61,000 white cells, 90% Hb. Differential count of 500 cells: Polynuclears, 38%; lymphocytes, 57%; large mononuclears, 3.2%; eosinophiles, .2%; mastzellen, .8%.

Red cells show slight variation in size with a few poikilocytes; a few show basophilic granulation. Lymphocytes are practically all of the small variety. This count suggested, but was not typical of, lymphatic leukemia, and, with the paper of Strauss [10] in mind, a diagnosis was made of sarcoma of the left kidney with a lymphemia. The skin was not pigmented. The urine on several examinations showed a faint trace of albumin and a few hyalin casts. The colon was found on inflation to lie along the inner border of the tumor. The patient rapidly lost weight and grew apathetic and extremely weak. He was given large doses of arsenic on account of the blood changes, but without much influence, as shown by a count of May 20. Leucocytes, 40,000. Differential count of 250 cells: Poly-



Tumor in Case VIII.

nuclears, 22.5%; lymphocytes, 74.8%; large mononuclears, 2.4%; eosinophiles, .8%.

During the count 4 normoblasts were seen. A number of the reds showed basophilic granulation.

On June 7 he was examined again, as a gangrenous zoster had developed six days previously over the right frontal region and 5 cm. back of the hair line. The right corneal reflex was absent. There was a very marked inflammatory reaction and during the week it had been noted that the tumor became much smaller, the edge sharper, and there seemed little question in the mind of the attending physician that it was an enlarged spleen. The mass was certainly smaller but of about the same shape as before. The blood had changed remarkably. Leucocytes, 4,200. Differential count of 500 cells: Polynuclears, 43%; lymphocytes, 53%; large mononuclears, .4%; eosinophiles, .4%; mastzellen, .6%. One normoblast was seen. In view of the blood changes following the gangrenous inflammation, and partly from the relations of the colon to the tumor, the diagnosis was at this time changed to a tumor of the spleen with lymphatic leukemia.

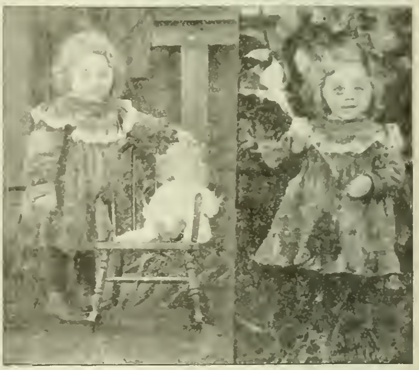
The patient was seen the last time July 24, and he died a few days later. Emaciation was most extreme and he was too weak to move. A most marked pigmentation of the face and trunk — a diffuse brownish staining — had developed in the last six weeks. The skin was intensely dry and was scaling in large flakes. Arsenic had been stopped when the zoster appeared but had been resumed after a week, and the pigmentation, though not characteristic, was referred to the drug. There were no new glands and no evidences of metastases in bones or elsewhere. A count two weeks before showed 50,000 leucocytes, the majority lymphocytes.

Autopsy revealed a long slightly nodular tumor of upper pole of the left kidney. The colon was adherent to the lower pole. Tumor masses had broken into the renal vein. There were no metastases. The marrow of sternum and ribs was normal; other bones, unfortunately, could not be examined. Examination of the tumor by Prof. A. E. Taylor showed a typical hypernephroma, and a photograph and slides of the tumor are shown here.

Several instances are noted in the literature of mistaking hypernephromata for enlarged spleens. Thus Kelly [11] mentioned the case of a man of fifty with grave anemia; Henschen [12] reported a large adrenal cyst thought to be a cyst of the spleen. Attention should be paid chiefly to the deep position of renal tumors in the flank and to the absence of a sharp notched edge. Mobility, passive and on inspiration, and position with reference to the colon are equivocal signs. Catheterization of the ureters and tests of the functions of each kidney may help to differentiate even when, as in a case cited by Kapsammer, hematuria occurs in the presence of a splenic tumor.

Comparatively few blood examinations have been recorded. Keen, Pfahler and Ellis [13] mention four cases with leucocytes from 6,000 to 12,000. Thorndike [14] records counts of 6,000 and 6,200. Weil,[15] in a patient with a cystic hypernephroma, found 7,800 leucocytes, with 40% mononuclears. Tileston and Wolbach,[16] in a boy of sixteen months with adrenal sarcoma, recorded 12,000 leucocytes, with lymphocytes 44.5%. It is well known that sarcomata not infrequently give high leucocytosis, but this is nearly always of polynuclear variety. Ewing [17] observed a sarcoma of mixed type with a blood picture of lymphatic leukemia. Reynolds [18] has reported a remarkable case of sarcoma of the kidney and retroperitoneal glands that developed rapidly in a man of fifty after an operation for hemorrhoids, and caused death in five weeks. Blood count a few days before death was: Red cells, 790,000; leucocytes, 16,000, with 60% lymphocytes. Davies [19] has recently written on "Sarcoma with Lymphemia." Grosheintz [20] has recorded a case of polycythemia in a man of forty-four with a hypernephroma of the left kidney. There was abnormal redness of the face and hands, and red cells were 7,500,000.

Case IX. On June 3, 1905, a girl two and a half years of age was sent me by Dr. Congdon, of Santa Cruz, on account of a peculiar condition developing during the last eight months. The right eye had been injured slightly by instruments during birth, but had become normal in a few days. She had never been ill and there was no history of trauma. The right eye began to protrude eight months ago, and the exophthalmos has rather steadily increased. There has been no pain. Three months ago sudden polydipsia developed, and polyuria was most marked. The urine was said to have been measured for a few days several months ago and averaged two gallons in twenty-four hours. About this time the child had spells of crying. She had been very fat up to two months ago, but since then had wasted rapidly. Polyuria lately had been moderate.



2 Years and 4 Months. 2 Years and 6 Months.

These photographs give some idea of the child's appearance. There was marked exophthalmos, more marked of the right eye, and paresis of both external recti. Prominence of both temporal and frontal regions was due chiefly to flat tumors of the bones, but in part to swelling of the soft parts. There were glands the size of pigeon's eggs in the posterior cervical triangles and smaller glands in front of the ears, beneath the jaw and in the anterior cervical triangles. There were no glands elsewhere. Percussion caused pain over the frontal bones and gave a tympanitic note on the right. There was a dark pigmented mole at the hair border on the left side. The child was heavy looking but not demented, and had a peculiar yellow waxy color. Her thyroid was not enlarged. The tonsils were normal. On percussion the thymus seemed large. The belly was prominent, but careful palpation showed no enlargement of liver, spleen, kidneys or glands. There were no signs of organic nervous disease, nor stigmata of congenital lues. An x-ray of the skull failed to demonstrate any basal tumor.

But one examination of the urine could be made. It was perfectly clear, looking like water, specific gravity, 1,001; no albumin, no sugar, and no casts or red cells in the sediment. Blood count: reds, 5,152,000; leucocytes, 21,000; Hb, 40%. Differential count of 500 cells: Polynuclears, 83.3%; lymphocytes, 5.4%; large mononuclears, 9%; eosinophiles, 2%; mastzellen, .4%.

Iodophilia was negative, no nucleated reds were seen, a moderate number of reds showed basophilic granulation.

Unhappily, the mother would not remain in the city and all trace of the child was lost. Chloroma and sarcoma springing from the bones at the base of the skull or from the hypophysis were the diagnoses chiefly considered. The blood examination spoke for sarcoma and against chloroma. The case is reported here because the recent paper of Hutchinson [21] suggested that the cranial growths might well be metastases from an adrenal tumor. You can see from the plates of Hutchinson how similar the cases are. Tileston and Wolbach, [16] in an excellent paper published in the June number of the *American Journal of the Medical Sciences*, add a personal observation to the series collected by Hutchinson, and analyze fourteen cases of this so-called "Hutchinson type of adrenal tumor." They give the following description: "This syndrome has been found hitherto only in infants or young children, and shows the following characteristics. Spontaneously or after trauma there appears ecchymosis of one or more eyelids, soon followed by exophthalmos, which is usually one-sided. The eye becomes more and more protruded, and there appears a growth in the adjacent temporal region, with enlargement of the lymph nodes in front of the ear and at the angle of the jaw. A tumor in the region of the kidney is felt during life in the minority of cases (6 out of 14); most frequently, as in our case, it constitutes one of the surprises of the post-mortem table. The orbital tumor grows with great rapidity, and death ensues early from cachexia and anemia. Optic neuritis may occur, but total blindness is the exception. Pain in the head is frequent, but vomiting, in spite of the extension toward the brain, is rare. The abdominal growth may be quite large and is then accompanied by swelling of the superficial abdominal veins, but never by ascites. Fever is usually absent. Urine, in the few instances in which it has been examined, has been free from blood and albumin, except in Aisenstein's case, in which albuminuria was present. The blood shows a secondary anemia, which may become extreme. There was reduction of the red cells to 1,400,000 in one case. The white cells are not increased, but there is usually a relative decrease of the polynuclear neutrophiles; whether the increase in basophiles affects the lymphocytes or the cells probably originating in the bone marrow (pre-myelocytes and allied forms) does not appear from the details reported, polynuclears only being mentioned."

The time at my disposal is all too short to try to classify and illustrate the different types of adrenal tumors. Attempt has been made clinically to separate tumors of adrenal gland proper and hypernephromata of the kidney, but without great success. A recent paper of Israel [22] records nine cases of growths limited to the adrenal and formulates rules for their diagnosis. Emphasis was laid on early involvement of the lumbar plexus, the occurrence of fever, the appearance of the tumor, first beneath the eighth to tenth ribs rather than lower down. The papers of Morris, [23] Mayo-Robson, [24] Ramsey, [25] Blackburn, [26] Bogoljuboff, [27] Kreyberg, [28] Rolleston and Marks, [29] Lépine, [30] Pettit and Colle, [31] Wendel [54] deal with suprarenal growths. The article of Pepper [32] reviews the literature on congenital sarcoma of the suprarenal and liver, and the paper of Tileston and Wolbach [16] contains the literature of suprarenal tumors in childhood. Cysts of the adrenal or cysts arising from hypernephromata are fully described by Henschen, [12] Weil, [15] McCosh, [33] Krœnlein, [34] Terrier et Lecene [35] and Schilling.[36] Hypernephromata of the kidney are, after all, the tumors of greatest clinical importance and it is only from recent statistics that we realize that they are by far the most frequent variety of renal neoplasms. In the series of Neuhæser, 68 out of 102 renal tumors were hypernephromata; in that of Albrecht, 28 out of 31; in Clairmont's, 17 out of 24; in Kapsammer's, 12 out of 14.

Among the most recent articles on hypernephromata are those of Albrecht,[9] Kuzmik,[37] Clairmont,[38] Bogoljubow,[39] Grosheintz,[20] Oshima,[40] Kapsammer,[41] Scudder,[42] Peuckert,[43] Sabolotnoff,[44] Harbord,[45] Wagner,[46] Berry,[47] Hoffman,[48] Matrosimone,[49] Illyes,[50] Eschner,[51] Pettersson,[52] Zunino.[53]

Some of the most important points in diagnosis of hypernephromata may be passed in rapids review.

1. *Hematuria.* This is a common symptom and may often be the first. Statistics differ widely as to its frequency, and, in reviewing the different series, one is inclined to agree with Talleyrand, "*La statistique est le mensonge en chiffre.*" There may be long intervals between attacks of bleeding, or recurrences every few days or weeks. Pain is frequently an accompaniment and may be exactly that of renal colic, or the bleeding may be painless, without cause and only noticed by accident. The physician should regard every hematuria with suspicion, and try all means to discover the cause; only in this way can mistakes be avoided. The bleeding may be only a few drops, or profuse and deadly. Only recently a case came to my notice of fatal hemorrhage from a hypernephroma — it had been regarded as due to aneurism of the renal artery. Clots may block the urethra and demand opening of the bladder; small wormlike clots have been regarded as particularly characteristic of neoplasm by Israel. Hemorrhages at long intervals rather favor the diagnosis of hypernephroma; in

the case of a large cyst with origin in a hypernephroma, reported by Weil,[15] there was an interval of thirty-five years between the first and second appearance of hematuria. The bleeding may be repeated through years before other symptoms bring the patients to the physician: five and a half years (Grawitz), six years (Busse), eight years (Hildebrand). Cystoscopy and catheterization of the ureters will help elucidate the origin and character of renal bleeding. It is to be remembered that hemorrhage may occur from congestion, from inflammation or from thrombosis of the renal vein or cava, and that it does not mean penetration of the pelvis by the growth.

2. *Pain* may be an early symptom. Like hemorrhage, it may long precede other symptoms or signs; in one of the above cases pain in the right loin and right thigh was noted six years before hematuria and appearance of a tumor. Albrecht found in his histories a record of local pain for four and a half, six, eleven, even fifteen years before the patients entered hospital. In a case of cystic degeneration of a hypernephroma recorded by Henschen[12] there was complaint of pressure in the epigastrium and occasional crises of pain for twenty years before a tumor was observed. Severe pain may accompany hematuria, or may be due to hemorrhages into the tumor, or even to congestion (Israel). The pain may be local, and is then of great value in determining the affected side, or it may be referred to the epigastrium or to the sacrum; it may radiate in the distribution of the lumbar or sacral plexus, or it may be referred to distant parts. Mayo-Robson laid stress upon pain in the shoulder in adrenal growth; Routier emphasized crises of epigastric pain and a feeling of constriction in the chest in an adrenal cyst; Wendel observed a man with left hypernephroma who had pain in the left lumbar region and severe pains in the left arm and leg. Pains in the extremities may be persistent and disappear after operation, but any distant pain should awaken suspicion of metastases. The areas of hyperalgesia of head have been of little help in diagnosis in my experience.

3. The *tumor* may vary greatly in size and rapidity of growth. It may be present for years without giving trouble and may suddenly assume a malignant character. Bogoljuboff records a case in which a tumor was noticed in the right hypochondrium for eight years, and Krœnlein mentions one of five years' duration. Trauma or an intercurrent illness, like influenza (Lubarsch, Morris), may incite a dormant tumor to activity. Hypernephromata have been erroneously thought to be tumors of the ovary (van Buren, Knott), abdominal aneurism (Rolleston and Marks), spleen, gall bladder (Mayo-Robson), liver (Thompson), stomach (Albrecht). In doubtful cases all methods of diagnosis should be employed and the evidence carefully weighed. The reports of Kapsammer show how important the modern methods of investigation are in deciding doubtful cases and in determining the condition of the affected end of the other kindey. Not infrequently the diagnosis of hypernephroma may be made from the character of metastases, although an abdominal tumor cannot be palpated. Albrecht records a case entering hospital with a spontaneous fracture of the femur; although the metastasis was recognized as a hypernephroma, it was not until five and one-half years later that a left-sided kidney tumor could be palpated.

In addition to pain the tumor frequently gives rise to other pressure symptoms. Guyon first directed attention to varicocele as a sign of renal neoplasm, and Legueu,[55] Héresco[56] and Hochenegg[57] have written papers upon the subject. Hochenegg concludes that it is a fairly common occurrence, is more frequently on the left, and is on the same side as the tumor. Its peculiarities are appearance late in life, usually without pain, the rapid onset, and the failure to disappear when the patient lies down, whereas it may be made to disappear by positions that remove pressure of the tumor from the veins; for instance, the knee-chest position. The causes he refers to (1) closure of the spermatic vein by growth of the tumor into the renal vein on the left; (2) compression of the veins by metastases in the retroperitoneal glands; (3) direct compression by the tumor, and (4) bending of the veins by the dragging or pulling of the tumor. Causes 1 and 2 are contra-indications to operation and may be recognized by the failure of the veins to empty in the knee-elbow position or when the tumor is lifted up. Dilatation of the abdominal veins, edema of the feet, thrombosis of the femoral veins are occasional pressure symptoms.

4. *Metastases* and their peculiarities have frequently been referred to. They are most often found in the lungs, liver and bones. Albrecht has recorded several instances of operation for supposed sarcoma or tuberculosis of bone in which examination of the specimen showed it to be a metastasis from a hypernephroma. The peculiarities of bone metastases in adrenal tumors in childhood have already been illustrated. Pulsating bone tumors should arouse suspicion of metastases from either adrenal or thyroid. Eschner[51] has recently reported a hypernephroma metastasis in the manubrium sterni simulating an aortic aneurism.

5. *Pigmentation* has been observed in but few cases of hypernephromata. In Case VIII above, the brownish discoloration was probably not at all due to arsenic. Watson noted pigmentation in a woman of fifty-two, with hypernephroma of the right kidney, which disappeared after removal of the growth. Morris, Ramsey, Merkel, Fox, Perry, Berdach, Luetkenmueller, Dickinson and Finney have recorded changes in the color of the skin in adrenal tumors of varied type, chiefly sarcomata.

6. *Trophic changes.* The remarkable instances of abnormal development of genitalia or of general overgrowth associated with tumors of the adrenals in childhood may be found described in the article of Linser[58] or referred to in the paper of Tileston and Wolbach. Hypertrichosis has been observed in both children and adults.

7. The *urine* may be normal throughout years

despite the presence of a renal tumor. A few red cells may appear after manipulation of the tumor, or may persist during the interval between attacks of hematuria. Albumin may be caused by inflammatory changes in the neighborhood of the tumor or may be due to transudation from tumor masses projecting into the renal pelvis (Israel). Rovsing has urged more careful examination for tumor cells and fragments. Polyuria is not an uncommon symptom.

8. *X-ray* plates are of great value in differentiating hematuria due to stone, although it must be remembered that stone and tumor may coexist and that rarely calcification in a tumor may simulate stone. Lumbar exploration of both kidneys will not often be necessary if all the modern methods of diagnosis are employed.

Results of operation. — One of the patients already reported was known to be well seven months after operation; another has remained well fifteen months, but the presence of a varicocele on the sound side renders his future doubtful. Dr. Levison tells me of a second case operated upon by him that remained well for some years. Out of 24 cases with operation recorded by Albrecht, 8 died from the immediate results of the procedure and 9 soon afterward from local recurrence or metastases; 1 died of pneumonia two years after operation, and autopsy gave no evidence of recurrence. Only 4 patients remained well after three years, and of these one developed metastasis in the occipital bone at the end of four years; a second, metastasis in the scapula after four years and three months; a third, metastasis in the spine after seven years. Only one patient out of the twenty-four remains well after four years. The danger of metastases years after operation renders prognosis most uncertain. Clairmont has recorded a case of recurrence in the bronchial glands ten years after removal of a renal hypernephroma. It must be remembered, however, that Albrecht has shown that there may be but one metastasis, and removal of this may lead to a permanent cure. The disheartening results of operations in the past should spur on the clinician to try all methods that may lead to early recognition of the growths.

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THE RELATION OF CARCINOMA OF THE CORPUS UTERI TO FIBROIDS.

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For permission to publish the original statistics and report the two cases described in this paper I am under obligation to Dr. Charles M. Green, Senior Visiting Surgeon for Diseases of Women at the Boston City Hospital.

The association of malignant changes in the endometrium with fibromyomata has been described by many observers. Piquand,[1] in 1905, was able to collect 196 cases, including three which he reported for the first time. In addition to these he collected 24 instances of the primary development of carcinoma in a fibroid.

Since the appearance of his article other cases of carcinoma of the uterine body complicating fibroids have been described by Cullen,[2] Bland-Sutton,[3] Cameron,[4] Roche,[5] Begoin,[6] Garkisch,[7] Schwab,[8] Bauby[9] and Vance.[10] A study of the association of these neoplasms is important from two points of view.

First, from the standpoint of those who believe that the mere presence of a fibroid of the uterus without symptoms does not constitute an indication for its removal. In this connection it must be decided whether the liability to cancer is of sufficient importance to justify the routine removal of all fibroids as soon as discovered. Or, if this method of procedure does not appear to be necessary, to learn by what means the development of a malignant process may be recognized in order that operative measures may then be undertaken.

Second, for those who advocate the removal of every fibroid, it is important to be able to decide in advance upon the proper operative procedure in a given case. It is generally conceded that in an uncomplicated myoma of the uterus the best operation is that of a supravaginal amputation rather than a total hysterectomy, because it is more easily and quickly performed, diminishes the danger of injury to the ureters and leaves a better support to the pelvic floor. On the other hand, a total hysterectomy is the operation of choice in malignant disease in order to insure as nearly as possible a complete removal of the growth and to guard against contamination of the peritoneum. The advantage, then, of recognizing a carcinomatous complication of a fibroid before operation is obvious.

That the coexistence of these growths in the uterus is not a mere coincidence seems to be amply demonstrated in the following series of nearly nine thousand consecutive fibroids, collected or reported by various writers, and including 230 cases from the Gynecological Service of the Boston City Hospital.

Author.	No. of Fibroids.	No. of Co-existing Cancers.
Tracy,[11]	3,561	63
Winter,[12]	1,607	20
Kelly,[13]	1,000	12
Pean,[14]	650	2
Bland-Sutton,[3]	500	8
Haultain,[15]	400	4
Duret,[16]	250	4
Olshausen,[17]	195	6
Bouilly,[18]	109	2
Cameron,[4]	104	1
Lanelogue,[19]	95	0
Quénu,[20]	94	3
Terrier,[21]	90	0
Le Bec,[22]	57	0
Pollosson,[23]	50	0
Boston City Hospital,	230	2
	8,992	127

From the foregoing table it is seen that out of 8,992 fibroids, 127, or 1.4%, were associated with carcinoma of the corpus uteri. When the rarity of carcinoma of the body ordinarily is considered, such a percentage in uteri, the seat of fibromyomata, can only be regarded as an indication of some relationship between the two growths.

This relationship can exist only in one of three ways:

1. The carcinoma may be the cause of the fibroid.
2. The fibroid may be the cause of the cancer.
3. The two growths may both result from the same or similar causes.

The first possibility can be readily dismissed, as fibromyomata of the uterus are slow growths, of a benign character, and their development must practically always antedate that of the more rapidly growing malignant process.

The second proposition, that the fibromyomata are, directly or indirectly, the cause of the carcinoma, is the view most commonly held and is advocated especially by Winter,[12] Noble,[24] and Piquand.[1]

That there can be a direct transformation of the myomatous tissue to epithelial elements is, in the light of modern pathology, impossible, and the terms "malignant degeneration" and "carcinomatous degeneration," which have been loosely applied to the association of these two growths, are incorrect and misleading.

The theory generally held by those who believe in the casual relationship of fibroids to cancer is as follows: As a result of mechanical changes in the uterus, dependent upon the tumor, there are alterations in the blood supply, producing a congestion of the mucous membrane, which, by furnishing a constant source of irritation, causes proliferation of the glandular epithelium. In this way a hyperplastic endometritis is produced which is then supposed to undergo malignant transformation.

In support of this view are the observations of Schrœder,[25] and Veit,[26] who have described the development of carcinoma in hyperplastic endometritis, and conclude that cancer always originates in a hyperplastic endometrium.

Recent writers have, however, raised some question as to the frequency with which inflammatory changes in the endometrium accompany myomata. Thielhaber and Hollinger,[27] in a careful study of 19 specimens, found that bleeding fibroids were accompanied by little or no hyperplasia of the endometrium, and Cullen,[28] in the examination of nearly 1,000 uteri removed for myomatous changes, found that where the Fallopian tubes were normal, and no sloughing submucous fibroid present, the uterine mucosa was always normal.

Furthermore, in accepting this theory of the origin of carcinoma of the corpus uteri, we have to assume that cancer is the result of an inflammatory process, which, in the present state of our knowledge of its etiology, is unwarrantable.

It seems simpler to consider that all neoplasms have certain underlying principles in common; that the conditions predisposing to their development are the same or similar. It seems reasonable to believe that a uterus which offers a favorable soil for the development of a myoma in its walls should also possess certain properties which favor neoplastic processes in the endometrium.

That there is a change in the function of the endometrium accompanying fibroids and preceding the development of cancer is apparent from the frequency of sterility in either condition existing alone. This has been reported for fibroids as present in 64% by Mann,[29] 52.8% by Frederick,[30] and 60% by Giles,[31] in series of 67, 125, and 150 cases respectively, while Cullen[32] states that in 19 cases of cancer of the uterine body 10, or 52½%, had never been pregnant.

The sterility accompanying fibroids has usually been ascribed to the resulting endometritis, but the researches of Thielhaber and Hollinger and Cullen have thrown considerable doubt upon the constant association of endometritis with these tumors.

If we accept the theory of Schrœder that hyperplastic endometritis is a necessary preliminary to the development of carcinoma the attempt may be made to explain the sterility in this condition as the result of the preceding inflammatory changes. There is no good reason to believe, however, that this endometritis exists during the entire period of uterine activity, preventing conception, but not giving rise to symptoms other than sterility. Cullen[32] states that the previous menstrual history in his cases gave no clue to the subsequent development of cancer.

It seems more reasonable to assume that in certain uteri there are conditions, the nature of which must be left to the future for discovery, which predispose to the development of fibromyomata in the musculature, and produce in the endometrium an alteration of function together with a tendency to malignant disease.

In Piquand's excellent article may be found a review of all reported cases up to 1905. The following is a brief summary of the cases published since his article appeared.

Cameron,[4] also in 1905, reported a case in which the uterus was found to be the seat of multiple small fibroids, with a carcinoma of the endometrium involving the uterine wall to the peritoneum and extending to the broad ligaments. He failed to state, however, whether the myomata were invaded.

Bland-Sutton,[3] in 1906, reported eight cases, in one of which the carcinomatous process was found to have invaded a fibroid.

Roche,[5] shortly after the appearance of Piquand's article, reported a remarkable case of a tumor situated on the posterior wall of the uterus, encapsulated like a fibroid, but giving histologically the picture of an atypical carcinoma. In several places the capsule had apparently been broken through and there were epithelial cells in the uterine muscle. The mucosa was normal except over the summit of the tumor, where it was necrotic and ulcerated. There were also several small fibroids. He believed this tumor to be an adenocarcinoma originating in the mucosa at the site of the ulcerated area, and invading a fibroid lying beneath.

Begoin[6] reported the case of a patient, from whose uterus he removed a sloughing fibroid by the vaginal route, who returned three months later with a carcinoma of the body. He removed the uterus, to which the growth appeared confined, and found also three small interstitial fibroids. He also mentioned another case of sloughing fibroid and cancer.

Garkisch[7] has reported a large fibroid associated with an extensive carcinoma of the fundus, which had deeply invaded the uterine wall, broad ligaments and the fibroid itself. The method of extension of the carcinoma was plainly demonstrated to be by the lymphatics.

Bauby[9] and Vance[10] have each described a case of fibroids associated with cancer of the corpus.

Cullen[33] has reported a case of adenocarcinoma of the abdominal peritoneum complicating myomata. In this case the uterine origin could not be demonstrated as the uterus was not removed, so I have not included it in the series.

Adenomyomata complicated with carcinoma have been reported by several writers. Cullen,[2] in a recent article, described two cases showing a typical carcinoma of the endometrium in which carcinomatous changes were also found in the glands of an adenomyoma.

Schwab[8] removed three small tumors from the posterior wall of a uterus by myomectomy which proved to be adenomyomata in which carcinoma had developed. He considered this case an instance of primary development of cancer in an adenomyoma itself, but inasmuch as the uterine mucosa was not examined, we are not justified in classifying it as such.

Dillman,[34] in 1904, reported two instances of carcinomatous change in the glands of an adenomyoma, the endometrium itself being normal.

v. Recklinghausen[35] also mentioned two cases of cancer developing from an adenomyoma.

The following cases were patients on the Gynecological Service of the Boston City Hospital.

Case 1. The patient, a widow of forty-seven, entered the hospital on the service of Dr. Green, Dec. 13, 1902. Her past history was uneventful. She had had two normal labors, thirty and twenty-eight years before. Menstruation had always been regular and normal up to four years previously, since which she had flowed constantly and profusely. During the last six months she had noticed a foul odor to the vaginal discharge. She had no pain and had lost no weight.

Examination showed a fibroid uterus, the size of a four months pregnancy. On account of the history it was considered advisable to curette the uterus as a preliminary. Examination of the curettings revealed a typical adenocarcinoma.

Nine days later a total hysterectomy by the combined vaginal and abdominal routes was performed by Dr. Green. The patient made an uninterrupted recovery and left the hospital in four weeks. In June, 1906, three and one-half years after the operation, she reported in good health, and pelvic examination showed no evidence of any return of the disease. Since then we have lost sight of her.

The specimen removed at operation showed a uterus 11 cm. in length and 9 cm. between the tubal insertions. Its surface was rendered uneven by five or six fibroids about 3 cm. in diameter. The uterine wall, on section, was found to vary from 1.5 cm. to 4.0 cm., and contained numerous small fibroids 0.2 cm. to 4.0 cm. in diameter.

The endometrium was replaced in many places by polypoid masses of carcinomatous tissue. Histologically it presented the appearance of a typical adenocarcinoma which had involved the uterine wall slightly but had not invaded any of the other fibroids, which were all typical leiomyomata.

Case 2. This also was a patient of Dr. Green, a single woman of fifty-six. Her right ovary had been removed thirteen years before by Dr. George W. Gay for a dermoid cyst. Her past history was otherwise uneventful.

Menstruation had always been regular and normal until a little over two years before admission to the hospital, when she began to flow longer and oftener than usual. The loss of blood increased in amount so that for a year she had flowed continuously, besides having severe hemorrhages about once in two months. She had had occasional backache and had lost considerable strength and weight. There was no odor to the vaginal discharge.

Examination showed a large intraligamentous fibroid arising from the left uterine wall. On account of the history this patient also was curetted, and, as in the first case, a report of malignant disease of the endometrium was received from the pathologist.

On Feb. 24, 1906, a complete hysterectomy was performed by Dr. Green in the classical manner. The patient made an excellent recovery from the operation and has remained well since.

The specimen removed at operation showed a uterus 7.5 cm. in length, 6.5 cm. in the transverse and 14.5 cm. in the antero-posterior diameters. The surface was nodular and on section there were seen numerous fibroids varying from 0.3 to 7.0 cm. in diameter throughout the uterine walls. The endometrium was replaced by a soft grayish mass of tissue. Histologically the tumor was made up of multiple leiomyomata, with an adenocarcinoma of the endometrium extending into the uterine muscle, but not invading the fibroids.

Adding together all the various cases collected by Piquand, the remainder of the reported cases and the two of Dr. Green gives us a total of 248 cases of associated adenocarcinoma and fibroids described in more or less detail. Out of these there were twenty-six instances of the primary development of a carcinoma in a fibroid, the mucosa being normal. Some of the earlier cases are a little questionable, but a sufficient number are authentic beyond any doubt to establish the fact that a carcinoma may develop in the interior of a fibroid with no sign of malignancy in the endometrium.

There can be but one explanation for this phenomenon, as suggested by Piquand, that the cancers arose from the glandular tissue of adenomyomata, and I have included in the above group also the cases where the nature of the primary tumor was recognized.

In addition we have four reported instances of a metastatic growth in the interior of a fibroid secondary to a carcinoma of another organ: the case of Schopter,[36] secondary to a malignant process in the lung; that of Pozzi,[37] secondary to a carcinoma of the breast; that of Kimmel,[38] secondary to a cancer of the ovary; and probably also that of Liebmann,[39] who reported a case of supposed primary carcinoma in a fibroid, but which was probably a secondary deposit from a process which existed in the ovary.

In twenty-five cases there was a malignant growth in the endometrium which had involved also the fibroid. Some of these were undoubtedly instances of simultaneous development in the endometrium and the glands of an adenomyoma, while in others the carcinomatous process had apparently started in the endometrium and extended to the fibroid either by continuity or by the blood and lymph channels. No statistics as to the relative frequency of these different methods of extension are available because of insufficient details in the various case reports.

In the remaining 193 cases there was a malignant process in the endometrium, but no apparent invasion of the fibroids.

The secondary development of a condition so similar in its symptoms to the primary disease as is carcinoma of the fundus to fibroids naturally offers grave obstacles to diagnosis. In reviewing the histories of the various cases there are, however, two symptoms which occur with sufficient frequency to be of great importance in calling attention to the possibility of a malignant complication in an apparently simple fibroid.

First, and most important of these, is an increase in the amount of hemorrhage from the tumor. When in a fibroid which has existed for a considerable length of time with no particular change in the symptoms there appears a marked increase in bleeding, and especially if the hemorrhage becomes constant, the possibility of malignant changes in the endometrium should always be considered. A more careful scrutiny of the histories of patients suffering from fibroids would lessen the number of cases where the diagnosis of carcinoma, unsuspected by the surgeon, is first made in the laboratory.

The return of hemorrhages from a fibroid in a woman who has passed the menopause is extremely suggestive of the development of malignancy. The importance of this symptom may be estimated from the fact that out of 94 cases in which the data were given, 60 had apparently passed the menopause before the appearance of symptoms pointing to carcinomatous changes in the endometrium.

The second symptom of importance is the appearance of a vaginal discharge in the intervals between the hemorrhages. This is at first slight and watery, but gradually increases in amount, becomes blood tinged, and after some months develops a foul odor.

The appearance of either or both of these symptoms in a fibroid should always cause suspicion of the development of malignant changes in the endometrium. In all such cases the uterus should be curetted and the curettings examined, as in this way only can a positive diagnosis be made.

In spite of the greatest care in scrutinizing the histories, and investigating all fibroids, an occasional case may pass unrecognized. To guard against any oversight on the part of the surgeon there should be present at all hysterectomies, as recommended by Cullen,[40] an assistant to open the uterus as soon as removed and search the endometrium for malignant disease. If this is found the operation should include a removal of the cervix and an exploration of the lumbar glands and those along the aorta to insure if possible a complete removal of the growth.

The prognosis of fibromyomata of the uterus, when complicated with carcinoma, depends entirely upon the extent of the malignant process when recognized and operated upon. However, the fact that cancer was found to have invaded the fibroid in only 25 out of 218 cases makes it appear probable that the dense tissue of the myoma interposes a distinct obstacle to the advance of a malignant process. It is possible to conceive that in a uterus which is practically converted into a mass of fibroids, such as is frequently met with, the extension of the carcinomatous process might be materially hindered.

Ehrendorfer [41] has reported a case well one and one-half years after operation; Piquand,[1] a case operated by Quénu.[20] in perfect health three years later; and Spencer,[42] one with no signs of recurrence in eight years. Out of the eight cases reported by Bland-Sutton,[3] four were reported well after periods of one, two, three and eight years respectively, while the remaining four suffered prompt recurrences. The two cases described above were well three and one-half and two years respectively after operation.

It seems fair to say that in general the prognosis of a fibromyoma complicated with carcinoma of the endometrium is the same as would would be that of the malignant disease alone, in exceptional cases, however, rendered more favorable by the presence of the fibroid.

The treatment, of course, is complete removal of the uterus as soon as it can be done without undue haste, giving the patient a few days to gain strength if necessary.

Whether the liability of fibroids to become complicated with cancer is in itself sufficient to justify the removal of all fibroids as soon as discovered may be regarded as a mathematical problem. If the mortality from hysterectomy should fall below the percentage of fibroids which become complicated with cancer, it might be considered justifiable to remove all fibroids for this indication alone. Unfortunately, however, few, if any, surgeons have such a low mortality, so it may be said that so far as this complication alone is concerned its liability does not furnish an indication for the routine of removal of fibroids, providing that the patient can be kept under close observation and the rule is strictly adhered to to operate on all fibroids which give symptoms.

As to whether other complications, or the sum total of all, may not furnish an indication for the routine removal of fibroids, the writer does not attempt to discuss. His purpose has been to consider only the relation of carcinoma of the corpus to fibroids, and to that end any reference to other complications, including other forms of neoplasm, has purposely been avoided.

CONCLUSIONS.

1. That there is a distinct relationship between carcinoma of the corpus uteri and fibromyomata.
2. That this relationship probably lies in certain common etiological conditions.
3. That the predisposition of fibroids to become complicated with cancer does not constitute an indication for their routine removal as soon as discovered, providing the patient can be kept under close observation.
4. That any marked increase in the loss of blood from a fibroid, or the appearance of any vaginal discharge in the intervals between the hemorrhages should be regarded as suggestive of the development of carcinoma.
5. That in a fibroid where either of these symptoms is present an immediate curettage should be performed in order that the condition of the endometrium may be examined, even if a radical operation has been decided upon.
6. That every uterus removed for fibroids should be immediately opened by an assistant and the endometrium inspected to guard against possible oversight of a malignant process.
7. That in all cases of fibroids complicated by adenocarcinoma of the corpus a complete removal of the uterus including the cervix is the operation of choice.

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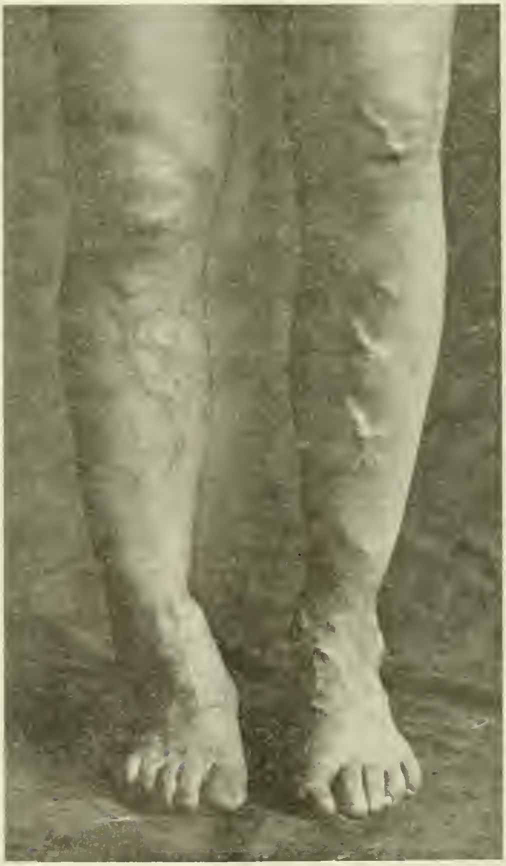
FRACTURE OF LOWER EPIPHYSIS OF THE TIBIA.*

BY FREDERIC S. COOLIDGE, M.D., PITTSFIELD, MASS.

WHEN I heard that the symposium to-day was to be upon fractures, I thought it a favorable time to report upon a rather rare case of epiphyseal fracture of the tibia and fibula which occurred to the writer himself. At the age of six years, while climbing a spiked iron fence, he fell and was suspended head downwards by his right foot, which was firmly held by the spikes of the fence in its natural plantigrade position. He hung there until he was assisted down, when it was found that the foot was hanging loose and flabby at the ankle. There was little or no pain, nor was there any open wound. The treatment was that for a simple fracture of both bones, and convalescence was in no way different from the usual cases. The result was pronounced perfectly satisfactory in six weeks, and in a month or so he had practically forgotten about the incident. The shape of the ankle was perfect. In about a year it was noticed that a bunch was appearing on the outer part of his ankle, which grew steadily but slowly larger. For three or four years a brace was worn with pressure on that bony bunch without any effect whatever except a good deal of pain from the powerful stiff-kneed lever used as a brace. During the period of growth the deformity grew more pronounced, together with the increased shortening of the leg, until at sixteen it ceased to increase, and has remained stationary since that time. There was at one time some talk of an operation to straighten the leg, but it was not done, and but little difficulty has been experienced from it,



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* Read before The Massachusetts Medical Society, June 9, 1908.

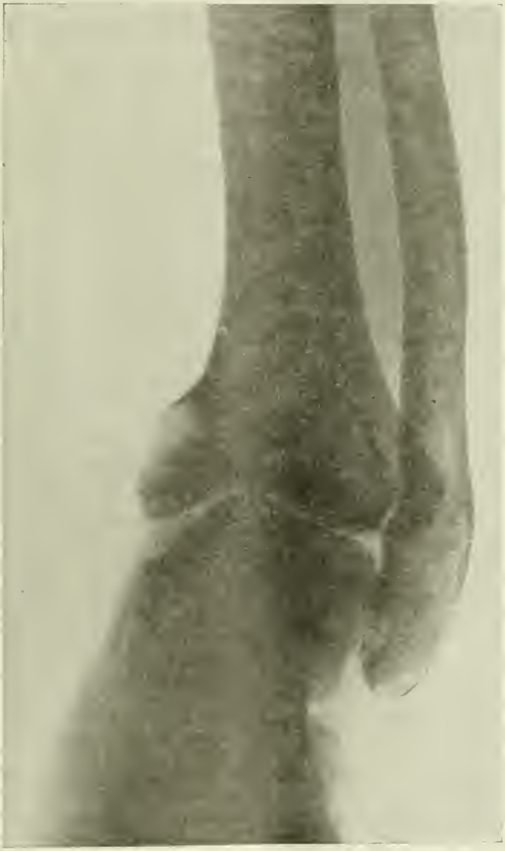
arising from the tendency to roll outwards, from the shortening of the leg and from the rather slight impairment of the ankle motions. Here is a picture of the deformity more than thirty-five years since the accident.

Notice the shortening of the leg, which is one and one-half inches; that the fibula with its practically normal growth has shot down much below the tibia and has shoved the whole foot inwards, so that the body weight, following the line of the tibial crest, falls even exterior to the fifth metatarsal bone, causing a tendency to turn the ankle.

Notice that the high position of the lower end of the tibia with the lowered fibula makes the axis of the ankle at an angle with the floor rather than horizontal.

Here are a couple of recently taken radiographs showing no signs of the fracture, but they show that the bony bunch on the outside is simply the normal fibula grown down below the end of the tibia and seeming enlarged simply from its being out of its normal place. The tibia has not grown in length at its lower epiphysis since the accident.

Although no statement exists of the diagnosis made at the time, I take it that it was a separation of the lower epiphysis of the tibia and probably of the fibula as well; that in healing the tibial epiphysis united with bone and all growth ceased in it, while the fibula uniting in the usual way continued to grow.



The literature of the subject of epiphyseal injuries that I could find is very little. Poland's book on that subject is by far the most comprehensive. McKenzie, of Toronto, describes two or three cases somewhat similar to the present case. Poland states that the usual age for separation of the epiphysis is between nine and seventeen years, and in only one case out of 28 collected of separation of the tibial epiphysis was the age below nine; that one was six years. Moreover, the force to cause such an accident is so great that in the majority of cases the broken end of the long bone protrudes through the flesh, making it a compound fracture.

I cannot find sufficient data to give an idea of what percentage of epiphyseal fractures are followed by lack of growth in the reunited epiphysis. My own belief is that it is one out of eight or ten. In most of the cases the destruction of the epiphysis is caused by force sufficient to make a compound fracture, or by some cutting force applied directly to the epiphysis, as in accidents with a circular saw or hay cutter, as has been reported. But such force is not necessary, as the present case proves.

We are all familiar with the fact that the long bones grow in length from the upper and lower epiphysis, and we know that in the lower limb most of the growth takes place at the epiphyses at the knee, while in the arm it is the shoulder and wrist epiphyses which are most active. I could not find an exact statement of the amount of growth in the leg due to each epiphysis. From this case, however, who is of normal height, I have the means of judging. His left tibia, growing normally from both epiphyses, has grown 5 inches from the age of six, while his right tibia, growing only from the upper epiphysis, has grown only 3½ inches. The relation between the upper and lower epiphyseal growth, therefore, is 3½ to 1½.

Cases in which an epiphysis has been destroyed by osteomyelitis and has caused cessation of growth are much more common. Eight years ago I had such a case in which the lower tibial epiphysis had been thus destroyed with a natural prolongation of the fibula downwards. The x-ray plate and the history showed that all active disease was long since at an end. The girl was six years of age, and the shortening of the tibia was two inches, the osteomyelitis having occurred in her second year. Knowing, from the subject of this paper, just about what shortening to expect from the age of six until the cessation of growth, and what amount of disability would result, I operated upon the fibula, removing a little over two inches well above the outer malleolus and swung the foot outwards into an over-corrected position without much difficulty. Healing was prompt. Two years afterwards I heard from the case by a letter stating that the deformity was beginning and slowly increasing. This, however, was only what I had expected. I was in doubt then, and still am, whether or not I should have destroyed the lower epiphysis of the fibula by resecting it at the time of the operation, thus securing a well-shaped ankle except for the shortening of the leg. McEntyre, as his paper written some time afterwards states, did in his case destroy the fibular epiphysis, and he is still in doubt whether, if he had left the fibular epiphysis, the length of the leg might not have been greater through compensating action of the fibula upon the tibia. I believe that while the compensatory action of the fibula makes a difference of a quarter of an inch in length, not by acting upon the tibia, but by slanting the axis of the ankle, it is the cause of the worst symptoms of the deformity — the liability of spraining the ankle and the impairment of motion in the joint.

DISCUSSION.

Dr. C. L. Scudder, of Boston: Previous to the employment of the x-ray it was impossible to determine whether the lower epiphysis of the tibia was injured unless the fracture was open or compound. At present an increasing number of these epiphyseal injuries is being recognized. The total number of cases is still small, but it is gradually increasing.

The epiphysis of a bone is in a sense independent of the diaphysis. It has its own blood supply, through a very thick and adherent periosteum. This helps to account for the absence of necrosis following a separation of the epiphysis; the periosteum, being so very adherent, is almost never entirely torn off.

The importance of separation of an epiphysis is great. If the epiphysis is displaced an unreduced deformity may result which will give rise to a static disturbance, long recognized by the orthopedist as traumatic flatfoot.

Will a separated epiphysis unite? Usually it will unite without difficulty. Theoretically at least there should be in any case of injury to an epiphysis a cessation of growth in the length of the bone. Practically the cases in which there is a cessation or retardation of growth are comparatively few.

The cessation of growth on the part of the epiphysis seems to be due to several factors. An interference with the epiphyseal circulation is the important factor. A destruction of the cartilage itself, or a great displacement of the cartilage, may cause a large amount of callus to be thrown out, and this extra amount of callus may so interfere with the blood supply that growth does not occur normally. Whether in any individual instance growth will be interfered with after injury to the epiphyseal cartilage will depend upon whether the growing end of the bone is involved or not. It must not be forgotten that the long bones increase in length more rapidly at one end than at another. If the growing end of the bone is damaged its growth is likely to be checked. The younger the child the greater is the likelihood of a disturbance in the growth of the bone.

I have been able to find records and x-rays of fifteen cases of injury to the lower epiphysis of the tibia at the Massachusetts General Hospital. In some instances the fracture was clean cut, in others it was comminuted. The injury was to the inner side in fourteen of the cases. In but one case was it to the outer side. In only five of the fifteen cases was the epiphysis involved alone. In the remaining ten cases the diaphysis was injured as well. The oldest patient was seventeen years, the youngest patient was nine years old. The age was not mentioned in two cases.

There is little doubt but that sprains and injuries to the ankle may have associated at times a damaged epiphyseal cartilage, a recognition of which would lead to a more careful prognosis.

These epiphyseal injuries are important because the joint surface is involved in the damaged area. Any interference with an articular surface may lead to impairment of motion in that joint.

Clinical Department.

REPORT OF A CASE OF MYOTONIA.

BY EDWIN A. DOWN, M.D., HARTFORD, CONN.

In considering the symptoms, nature and course of myospasms generally, and those of Thomson's syndrome particularly, a doubt may insinuate itself in the progress of one's deliberations respecting the validity of the claim held by some that every case of genuine myotonia must bear the trademark "*ab ovo,*" notwithstanding the existence of identical symptoms in cases not possessing this prenatal qualification. While it is assumed that only a waning minority stills clings to the hereditary element as essential to a correct diagnosis, it was deemed fitting that the following brief history of a case should be placed on record as confirming the view of the existence of cases manifesting the cardinal symptoms of myotonia, in which neither hereditary nor congenital influences have any part, and that such cases should be entitled to full fellowship in the fraternity of myotonic states.

The history of the case as here given is a compound of the statements of the patient and the family physician, and includes the following items.

Male; fifty-six years of age; occupation, market gardening. Has always lived an out-of-door life and is a good representative of the sturdy and sinewy type of New England farmer.

Is married and his family history is excellent, hereditary disorders of any sort being positively excluded, and the existence of any chronic disorder either neurotic or otherwise, in the family lineage being absolutely negative so far as the knowledge of the patient extends.

Habits regular regarding the use of alcoholic drinks and associated excesses. Is considered a model citizen.

Assigned cause, overwork; duration of attack, one year; onset of attack, subacute.

The patient makes the statement that he was thrown from a wagon twenty years ago, and though not losing consciousness, was believed to have suffered a slight cerebral concussion. He was unable to state anything concerning the nature of the symptoms manifested at the time which would justify the diagnosis, and the physician who attended him is not now living; hence this feature of the history is a matter for conjecture, though it must be borne in mind that the injury has in no way interfered with the discharge of his regular duties since the mishap, and there has existed no sensation or other feature which might serve as a reminder that the accident had ever occurred.

The present symptoms have existed for a year or more and consist of a rigidity of the muscles upon attempts at movement, more marked in the lower limbs, the condition becoming intensified after periods of rest.

A typical diurnal experience is portrayed in the following train of symptoms.

Conditions are at their most aggravated stage in the morning immediately after waking, if any attempt at movement is made. Rising from his bed is quite a process if unaided, and is accomplished only after many awkward and vexatious attempts.

His first procedure is to grasp the knees firmly with the hands, and by persistent traction draw the trunk into the upright position. This being attained, he employs his buttocks as a pivotal center and turns his feet toward the side of the bed, where he remains a few minutes in a rigid condition before venturing to stand upon his feet. For this latter purpose he employs a cane or other aid, and when he is finally in an upright posture he is utterly unable to move on account of the rigidity of the limbs which "feel like sticks of wood" if he attempts to use them. Interpolating one of his forceful utterances, "Doctor, I could not move if my house was on fire," we gain a definite idea of the condition of things from his viewpoint. He requires assistance in dressing and undressing, though more frequently the former, for toward evening, after exertion, the contractions are decidedly much less marked and a near approach to the normal attained.

The rigidity was first apparent in the lower limbs and confined itself to this location for several months before involving the upper extremities. During this interval he was able to milk his accustomed number of cows, though he experienced great difficulty in rising from the sitting posture, and in using his limbs in walking after rising, until after the lapse of a minute or more on account of the extreme muscular contraction.

The tenacity with which he adhered to his work is well illustrated in an account given by one of his neighbors. It appears that this neighbor was passing the garden in which our patient was engaged in weeding some vegetables. The neighbor noticed that the patient did not rise from the furrow in his progress from one plant to another, but dragged himself along with his hands, while his feet trailed after him in a manner which, to the observer, suggested paralysis. Inquiring as to the cause of this unconventional method of locomotion, it was ascertained that the patient's legs became so rigid, after successive attempts necessitated by frequent changes of location, as to render them temporarily useless, and he preferred this unusual mode of progress to the delay resulting from rising each time he wished to alter his position, and losing several minutes before the spasm was sufficiently relieved to allow him to proceed. No material change was noticed for a period of about eight months, when the upper extremities became involved, and only sporadic attempts at any form of occupation were possible. Full arm movements were as difficult as those of the hands and fingers, and during this stage of the disorder the ability to raise the hand above the shoulder was completely lost on account of the spasms.

On the sensory side vasomotor symptoms in the form of cold feet and limbs were present, added to which was a very annoying feature characterized by a sensation of intense cold in both ears. This algid condition caused more concern than the muscular rigidity, and during the warmest days in August the hot-water bag was frequently appealed to in order to mitigate the suffering from this source. This symptom was not present early in the disorder and persisted after the subsidence of the muscular contractions. I do not recall seeing this thermic perversion noted in the histories of other cases, and speculation as to its value in the makeup of the disorder we are considering can be indulged in with propriety. We may regard it as a simple coincidence from one point of view, or as an indication of the involvement of the thermic centers of the posterior root processes, or both.

Some "soreness" was complained of at the time of the maximum contraction of the muscles, and the middle third of the right arm was the most sensitive area. There was no pain in the ordinary sense at any time.

Sometimes unpleasant sensations were experienced while endeavoring to place his lower limbs in a comcomfortable position in bed. His legs felt as if they "did not fit" in any position he chose to place them. His remedy was to get out of the bed as best he could and move about the room for a few minutes, after which exercise he was able to lie down with some degree of comfort.

Occasionally there was a slight tremor of the hands (non intention) which soon disappeared on exercise. Patellar reflexes symmetrically increased; other reflexes normal.

Gait was slow and shuffling when walking was first attempted, but after a few minutes' exercise there was nothing to attract attention in this direction. Station normal. No involvement of the cranial nerves. The treatment was directed toward the improvement of the general health and an antispasmodic was included.

There was a limited hypertrophy of the calf muscles, and the mechanical excitation of these as well as the chief groups of muscles involved in the spasmodic phenomena was noticeably increased; this held good for electrical stimulation also, whereas the motor nerve response was unaltered.

Marked improvement followed after a few months from the time of the first examination, or one year and a half from the onset of the disorder, when the symptoms had so far subsided as to admit of his resuming light employment in accustomed spheres.

Attacks recurring at irregular intervals but with diminished severity have characterized the condition of things up to the present writing, but a return to an absolutely normal state has thus far not materialized.

The shadow of a resemblance to an occupation neurosis, and the possible existence of an organic cord affection, were not lost sight of in forming an opinion as to the nature of the disorder, but in view of the progress of the case, as well as its capital features, the diagnosis of a myotonic condition would appear to be fully justified.

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Medical Progress.

PROGRESS IN DERMATOLOGY.

BY HARVEY P. TOWLE, M.D., BOSTON.

THE SERUM DIAGNOSIS OF SYPHILIS.

So long as clinical observation remained the only method by which the diagnosis of syphilis could be made there were many cases which we were obliged to leave in doubt. When, however, the spirochete pallida and the possibility of transmitting syphilis to animals were discovered, the means of diagnosis was at once so enriched that we were now able to render the diagnosis certain in many of these formerly doubtful cases. In 1906 Wassermann proposed still another method as an aid to the diagnosis of syphilis, which is referred to in the literature as the Wassermann reaction, or the method of serodiagnosis, or the serum reaction, or the method of the fixation, sometimes called deviation, of the complement. Although the method of the serodiagnosis of syphilis is still on trial, so much has already been reported which at least suggests its possible importance that it warrants our consideration. If the claims of its advocates are substantiated by its further study this method will enlarge our diagnostic powers still more so that many cases which still remain beyond our present means will be brought within our certain knowledge. Before we can judge fairly, however, of the claims made for the method of serodiagnosis in syphilis, we must have not only a clear understanding of the complicated theory upon which the method is founded but also of the characteristics of the various reagents.

In 1901 Bordet and Gengou [1] published their method for the diagnosis of certain bacterial diseases, notably typhoid, by means of a serum reaction. It was already known that the injection of certain bacterial emulsions or vaccines made from dead or living bacteria would render the organism immune to that bacterium. Such vaccines, therefore, represented the actual substance of the microbe and were termed *antigen*. It had been also discovered that injections of the antigen not only conferred immunity upon the organism, but at the same time stimulated it to the production of certain defensive substances in its serum which were called *antibodies*. These antibodies were characterized by a specific or selective action in that they would react only to the particular antigen (bacteria) to which they owed their existence [15]; when such "*immune sera*," obtained from an animal which had previously been treated by a series of injections of a bacterial emulsion (antigen), were mixed with the appropriate antigens (emulsion), *bacteriolysis* occurred, that is, the bacteria (antigen) were immobilized, transformed into granules and even dissolved. [15]

Antibodies. — Investigation of the antibodies showed that they were composed of two substances of widely divergent characteristics which have been termed the *amboceptor* and the *complement*. Moreover, it was learned that unless both amboceptor and complement were present in the serum added to the antigen, there was no bacteriolysis. As will be seen later, this fact, that neither amboceptor or complement, when alone, can produce the reaction, was of great importance in the application of the theory to the actual test.

Bacteriolysis. — The explanation of bacteriolysis given by Ehrlich and Morgenroth [15] is that the bacteria (antigen) are impregnated by the specific amboceptor after the manner of a coloring matter and are thereby rendered susceptible to the bacteriolytic power of the complement. At the same time that the amboceptor impregnates the antigen it fastens itself upon and absorbs the complement (*complement fixation*).

Amboceptor. — We have seen that the antibodies are composed of two different substances, amboceptor and complement. Of these it is the amboceptor which gives the immune serum its specific character. It is also thermostabile, as it is not affected by heat.

Complement. — Compared to the amboceptor, the complement is quite instabile, as it is readily destroyed by heat, daylight, sunlight, chemicals, etc. It can, however, be preserved unchanged for a considerable length of time if kept at a low temperature.[12] Unlike the amboceptor the complement is not specific in its action but may be found in all normal sera. The amboceptor is found only in immune sera.

Inactivated serum. — These divergent characteristics of the amboceptor and complement were essential to the development of the method of serodiagnosis. As the amboceptor is thermostabile and the complement thermolabile, it is possible to remove the complement content from the immune serum by exposing the serum to a temperature of 56° C. for one-half hour. By these means the thermolabile complement is destroyed but the thermostabile amboceptor is left unharmed. Inasmuch as bacteriolysis of the antigen will occur only in the presence of the amboceptor and complement, such heated or *inactivated* sera have been rendered powerless to produce bacteriolysis, as they now contain only the amboceptor, the heating having destroyed their complement. As, however, complement is necessary for the completion of the reaction, the lack in the inactivated serum is supplied in practise by the addition of fresh guinea-pig serum which has been shown to be especially rich in complement.

The test. — In making the test itself the suspected immune serum, previously inactivated by heat (amboceptor), is added to a mixture of fresh guinea-pig serum (complement) and a known antigen (bacterial emulsion). We know that the specific amboceptor (inactivated serum) will react only to its own antigen. Therefore if bacteriolysis occurs in the known antigen upon the addition of the unknown amboceptor (suspected serum) we know that the amboceptor of the antibody of the tested serum must be specific for the antigen (bacteria) used in the test.

Hemolytic system. — What has already been said has been in reference to the so-called bacterial system. It has been discovered, however, that under similar conditions a hemolytic system will give similar results. It was found that if an animal *a* of one species was treated by a series of injections of the red blood corpuscles of an animal *b* of another species, the serum of the animal *a* developed antibodies which were specific for the red blood corpuscles of the animals of the species *b*. Therefore the red blood corpuscles from the animal *b* injected into the animal *a* corresponded to the antigen and the resulting substances produced in the serum of the animal *a* to the antibodies. These hemolytic antibodies were also found to be composed of amboceptor and complement. Furthermore the hemolytic amboceptor and complement possessed properties similar to those of the corresponding bacteriolytic substances. Just as the bacteriolytic amboceptor was unable to induce bacteriolysis except in the presence of complement, and vice versa, so neither the hemolytic amboceptor or complement was able to produce hemolysis if both substances were not present together. Like the bacteriolytic, too, the hemolytic amboceptor was found to be specific and thermostabile and the hemolytic complement non-specific and thermolabile. From the last it followed that the complement could be removed by heat from the hemolytic serum just as heat is used to render the bacteriolytic serum inactive. It will be seen, therefore, that the two systems, the bacteriolytic and the hemolytic, resemble each other completely and the development of the serodiagnosis rests upon the application of that fact to practical purposes. The theory of the serum reaction, therefore, will be plain if the characteristics of the different substances employed in the test are remembered, bearing in mind, especially, the fact that neither bacteriolytic nor hemolytic amboceptor can unite with its antigen in the absence of complement, and that the amboceptors of both systems are specific as neither will react with any antigen but its own. (It is to be noted in this connection that Eysbrock[11] denies that the amboceptors are specific because in his experiments with streptococcic sera he was able to obtain a reaction not only with the varieties used for immunization, but also with other varieties from outside sources and with pneumococci and meningococci as well.)

Illustration of method. — To illustrate the method of bacterial serodiagnosis let us suppose that the serum to be tested is from a case of suspected typhoid. It will be remembered that immune serum contains the antibodies which are composed of amboceptor and complement. If such serum should be added directly to the antigen without further treatment we should be unable to control the test owing to the presence of complement. It is necessary for control that we should use only measured amounts of each substance. Therefore the immune serum is inactivated at once through the removal of its complement by heating at 56° C. for one-half hour. Then the serum will contain the amboceptor only. As antigen an emulsion of a culture of typhoid bacilli is used. As the complement has been removed from the immune serum it is necessary to supply its loss by complement from another source in order that the three factors necessary for a reaction — antigen, amboceptor and complement — may all be present. Experience has shown that fresh guinea-pig serum is best fitted for this purpose and it is now generally used to supply the complement. Having prepared the reagents in the manner described, the next step is to mix in a tube measured amounts of the typhoid bacilli emulsion (antigen), the inactivated suspected serum (amboceptor) and fresh guinea-pig serum (complement). This mixture is allowed to stand for a couple of hours. As the tube contains the three factors necessary to the reaction bacteriolysis will now occur if the amboceptor (suspected serum) is specific, and the complement will be fixed. In order to demonstrate the fixation or non-fixation of the complement by the bacterial system there is now added to the mixture a hemolytic system consisting of red blood corpuscles (antigen) and inactivated immune serum (amboceptor), when the tube is again put away for a time. Later on it is examined for the presence or absence of hemolysis. If hemolysis is present, it will indicate that there has been no bacteriolysis with the consequent fixation of the complement in the mixture. It will have been noted that the hemolytic system which was added to the bacteriolytic system was imperfect in that it had no complement of its own. Remembering that in the absence of complement hemolysis cannot occur, it is evident that in order to present the reaction the hemolytic system must have obtained complement from some outside source. As the only complement contained in the mixture of the two systems was originally supplied to the bacteriolytic system, that alone could have enabled the hemolytic reaction to be completed. Therefore the presence of hemolysis indicates that there has been no bacteriolysis or complement fixation in the bacterial system as the complement has not been absorbed but left free to unite with the hemolytic system *deviation of the complement.* As the antigen used in the test was an emulsion of typhoid bacilli the absence of complement fixation, as is shown by the presence of hemolysis, proves that the antibodies in the suspected serum, were not specific and that, therefore, the case was not one of typhoid. On the other hand, if the antibodies of the suspected serum had been specific, the amboceptor would have united with the antigen (typhoid bacilli), producing bacteriolysis by fixing or absorbing the complement. This would have been shown by the absence of hemolysis, for, as the complement would have been used up by the bacteriolytic reaction, none would have remained for the use of the hemolytic system. Therefore, the absence of hemolysis would indicate that the antibodies in the suspected serum were the product of the typhoid bacilli.

Levaditi [15] illustrates these different reactions by a scheme like the following:

(Guinea-pig serum.) (Inactivated serum.) (Red blood corpuscles.)
I. Complement + Hemolytic Amboceptor + Antigen = Hemolysis.
II. o + Hemolytic Amboceptor + Antigen = Absence of Hemolysis.
(Guinea-pig serum.) (Inactivated serum.) (Bacteria.) (Bacteriolysis.)
III. Complement + Bacteriolytic Amboceptor + Antigen = Fixation of Complement.
(Bacterial antibody.) (Bacteria.)
IV. *a* (Complement + Amboceptor + Antigen); then *b* (Hemolytic Amboceptor + Hemolytic Antigen) = Absence of Hemolysis. (Bacteriolysis has occurred in *a* so that hemolysis cannot occur in *b* as the complement has been fixed by *a*.)

Development of Wassermann method. — This is the Bordet-Gengou method from which the Wassermann method of serodiagnosis for syphilis was developed. As the antigen of the Bordet-Gengou method is obtained from bacterial cultures its application is necessarily limited to the diagnosis of those infectious diseases whose microbes can be grown artificially. The discovery by Wassermann and Bruck that the employment as antigen of extracts obtained by water or physiological salt solution from living or dead bacteria [28] yielded results which were quite as reliable as those obtained by the use of bacterial emulsions led directly to the later discovery that extracts of infected organs could be used as antigen. This fact rendered it possible to extend the application of the Bordet-Gengou method to those infectious diseases whose microbes could not be artificially cultivated. Wassermann experimented for some time with the use of watery organ extracts in the serodiagnosis of various bacterial diseases before he applied the method to the diagnosis of syphilis. Finally, in 1906, he announced, in connection with Neisser and Bruck, [30] that, using the serum of apes which had previously been treated by injections of syphilitic material, syphilitic antibodies had been demonstrated for the first time. Continued experiments with apes led them to conclude that "the immune serum obtained from apes reacted equally upon syphilitic material from men and apes; and only with syphilitic material, not with non-syphilitic; that normal ape serum gave no reaction with syphilitic men or apes; that non-syphilitic serum did not interfere with hemolysis, whereas syphilitic ape serum did." [31] Therefore it was concluded that the Wassermann method of serodiagnosis was specific in syphilis. "Therewith was laid the first scientific foundation principle for the eventual solution of serodiagnosis in syphilis." [28] The first application of the method to the diagnosis of syphilis in man was made in Neisser's clinic at Breslau.[8]

Technic. — The technic of the Wassermann method is so exceedingly complicated and difficult that Wassermann insists with the greatest emphasis that unless his directions are followed implicitly the sources of error will be so numerous that the results cannot be accepted as trustworthy. So convinced is he of the absolute error of any deviation, not only from the method, but also from the manner of preparing the reagents, that when Moreschi [20] criticised his method Wassermann retorted [27] that different conclusions from his were to be expected as Moreschi had substituted a different hemolytic system. It will, therefore, be necessary for us to review the method of preparing the different reagents.

Antigen. — The most important reagent is the antigen. This is prepared from a syphilitic fetal liver which has been proved by the microscope to be rich in spirochete. After first washing with sterile salt solution, the liver is cut with the scissors into pieces as small as possible. From the pieces an emulsion is made by adding to every gram of the organ 4–5 gm. of physiological salt solution containing 0.5% of carbolic acid. This emulsion is shaken in a machine for twenty-four hours at room temperature. Next it is separated by the centrifuge until the overlying liquid is completely cleared and freed from every trace of fine particles and sediment. It is essential that the liquid should be absolutely clear. The clear supernatant liquid is then poured off and preserved on ice until needed.[31] The liver substance may also be preserved by complete dessication in a vacuum [15] or by freezing, [8] but according to Meier, [18] these methods possess no advantage over the emulsion, for he has kept emulsions on ice for four months without signs of change. Meier warns that if the extracts are not protected from light and heat, or if they are centrifugalized too frequently, their activity diminishes more rapidly.[18] The strength of each extract is tested before use by determining the highest dilution at which it will produce hemolysis.

Amboceptor. — For the amboceptor is used serum obtained from the patient either by venesection or lumbar puncture and immediately inactivated. When obtained by venesection from adults, " from 6 to 8 ccm. of blood should be withdrawn at a time, double the amount needed for one test and the necessary controls. In children with veins of small caliber, the serum may be obtained by wet cupping. In infants, who bear the loss of blood badly, only the minimum amount of blood (1.5 ccm.) should be taken." [18] To both serum and cerebrospinal fluid is added 0.5% of carbolic acid. They are carefully centrifugated and rendered inactive by heating to 56° C. for one-half hour as soon after withdrawal as possible. The strength of each inactivated serum is noted by determining the greatest dilution which will give a reaction. For the purpose of the test double the strength of this maximum dilution is used." [18]

Complement. — As complement fresh drawn guinea-pig serum is always used.

Hemolytic system. — The hemolytic system consists of rabbit serum inactivated by heat at 56° C. which has previously been rendered immune by injections of the blood of a wether, — and as antigen the red blood corpuscles from a wether.[31]

Controls. — Each reagent must be tested by control experiments immediately before using in the main test in order to show that they have not deteriorated and that they will not produce hemolysis when used alone.

The test method. — In making the actual test, fixed amounts are used of each reagent previously made to correspond to a standard strength. The progress of the reaction must be followed closely and the test not allowed to proceed automatically." [18] " A positive reaction is shown by a more or less marked turbidity which sometimes occurs as quickly as within one half to three quarters of an hour. When hemolysis is complete the tube should be removed at once and put on ice. The value of the result does not suffer from the rapidity of the reaction. On the contrary they have known a tube which showed the prevention of hemolysis in the evening to show complete hemolysis in the morning. Therefore, if the tubes are not examined at the right time, the observation may be in error." [18]

(*To be continued.*)

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Bequests. — Through the will of Louis Bourneuf, of Lynn, Mass., the Lynn Hospital receives $500 and the City Orphan Asylum of Salem, $300.

Reports of Societies.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Proceedings of the Thirtieth Annual Congress of the American Laryngological Association, held at Montreal, Canada, May 11, 12 and 13, 1908.

President, Dr. Herbert S. Birkett, Montreal.

PRESIDENT'S ADDRESS.

After thanking the Association for the honor it had conferred upon him, Dr. Birkett referred to the deaths during the year of Prof. Leopold von Schroetter, of Vienna, the only Honorary Fellow of the Association, and of Dr. Moritz Schmidt, of Frankfort, Corresponding Fellow. He then delivered an entertaining historical address entitled "A Brief Account of the History of Medicine in the Province of Quebec from 1535 to 1836." Following this the reading of scientific papers was begun.

REMOVAL OF FOREIGN BODY FROM THE TRACHEA.

Dr. J. H. Bryan reported a case of foreign body removed from the trachea of a six years old child, the body being a grain of corn. Several days before admission to the hospital he had inhaled the grain with the usual suffocative symptoms following, but these all quieted down and it was supposed that the body had escaped the air passages. Returning attacks of dyspnea disproved this assumption, but after admission to the hospital careful examination and a radiograph failed to reveal anything definite. Later respiratory signs were absent over the right lung, but in a few hours air seemed to be entering freely on this side. Several ineffectual attempts were made to introduce a tracheal tube through the larynx, but the swollen condition of the mucosa prevented. Just at this moment the child became cyanotic and stopped breathing. The trachea was immediately opened and the grain of corn was seen to pass the opening on its way to the lower trachea. It made several excursions to and fro before the surgeon was able to grasp it. The patient rallied well from the operation and the tube was removed on the fourth day. Some laryngeal stridor remained for a day or two longer. The grain of corn was a large one and had increased in size from imbibition of moisture. Dr. Bryan said that the case showed that it was not always advisable to persist in passing a tracheal tube through a swollen larynx after several ineffectual attempts have been made. Irreparable injury may be done to the soft parts.

PERSONAL EXPERIENCE WITH THE BRONCHOSCOPE, ESOPHAGOSCOPE AND GASTROSCOPE.

Paper by **Dr. Thomas H. Halsted**, of Syracuse, N. Y.

The author's experience may be summarized as follows: Eighteen operations or examinations were performed on 14 patients, fourteen times under general anesthesia (all but one, ether) and one without any anesthetic. Age varied from a newborn babe of two hours to a woman of seventy years. In four instances the operations were for the removal of foreign bodies; viz., penny in the esophagus of a five-year-old boy, bone in the bronchus of a woman, fish fin in the trachea of an eight months infant, spicule of glass in the larynx of an eight months old infant, all being removed but the last.

Of the remaining cases fourteen operations and examinations were for laryngeal papilloma, laryngeal stricture, papilloma of the lower pharynx, spasmodic stricture, suspected foreign body in the esophagus, three times on one patient for stricture and ulceration in the bronchus, once for relief of asphyxia in a newborn infant caused by pressure of enlarged thymus and thyroid glands and four times for examination of the stomach for gastric ulcer or other lesions. The author referred to the pioneer work of Jackson, through whose devices the stomach has been added to the organs capable of being examined directly by the eye.

Discussion on the two papers was opened by **Dr. Emil Mayer**, of New York, who submitted specimens of foreign bodies he had removed during the last month by the bronchoscopic method. One was a grain of corn and the other the reed from a tin whistle. He laid stress on the point that vegetable bodies should be removed immediately whether symptoms were threatening or not. Delay causes such bodies to swell and may produce a local edema. He uses cocaine in addition to general anesthesia. Dr. Halsted's case was of special interest because it is probably the youngest on record. It is necessary in such work to have well-trained assistants.

Dr. H. L. Swain, of New Haven, reported two cases, one that of two false teeth from a portion of a dental plate swallowed by an epileptic in one of his attacks. It had lodged in the upper part of the trachea for twelve hours and so great edema was set up that an immediate tracheotomy was necessary. The plate was finally removed through a Killian tube. A second case was that of a tin whistle which had gone down into the larynx and lodged in the trachea. It was readily removed by a Jackson's forceps.

Dr. E. Fletcher Ingals, of Chicago, said that if a patient is suffering from severe dyspnea due to a foreign body we ought not to try upper bronchoscopy owing to the danger from the anesthetic, and in most of these cases in which it has been tried a hasty tracheotomy has been required. Tracheotomy should be done first and the body will often be coughed out, but if it should not be, bronchoscopy will be much easier through the glottis. Chloroform seemed to the speaker a better anesthetic than ether in the condition considered. He regarded the use of the galvano-cautery in the bronchial tubes as dangerous. Bronchoscopy has a brilliant future but it is not devoid of danger and should always be done with the greatest caution.

Dr. W. E. Casselberry, of Chicago, said it was possible to train patients to stand removal of papillomata through laryngoscopic methods. As to an anesthetic, ether should be supplemented with a hypodermic of morphine in order to control the laryngeal reflex. If the morphine is not used, he would prefer chloroform. He had never seen any bad results from the use of cocaine in addition to the general anesthetic.

Dr. A. Coolidge, Jr., of Boston, said that in most cases a foreign body in the bronchus could be reached by upper bronchoscopy provided the necessary instruments and ability to use them were available; otherwise tracheotomy and lower bronchoscopy were indicated. The value of the upper operation for diagnostic purposes should not be overlooked.

In connection with the discussion **Dr. H. P. Mosher**, of Boston, showed at this point the following instruments: an esophageal speculum, an oval esophageal tube, a mechanical dilator for strictures of the esophagus and a triangular laryngeal tube.

Dr. J. P. Clark described a device he had employed for detecting the exact site of esophageal stricture. Before passing the esophagoscope, he had the patient take a glass of water in which was a silk thread, one end being fastened to the patient's face by a bit of adhesive plaster. On passing the tube, the thread could be followed down the gullet until it disappeared into a small opening of a pouch into which the tube went, thus showing the exact site of the stricture.

Dr. H. L. Wagner, of San Francisco, spoke of the value of chloroform in these cases as administered per rectum.

Dr. J. M. Ingersoll, of Cleveland, had found the x-ray of value in preventing the recurrence of laryngeal papillomata.

In closing the discussion **Dr. Halsted** said he had had good results in applying argyrol to bronchial granulations, etc. He had used ether in all his cases without any bad results. In several instances the only assistant he had had, had been his office nurse. He believed that there was a great future for the investigation of the interior of the stomach by means of tubes. He had seen scars in the stomachs of two patients, had been able to detect inflammatory areas which he believed to be ulcers and in one case had been able to see the pyloric opening and even beyond.

THE FORM OF THE HARD PALATE.

The paper of **Dr. Harris P. Mosher**, of Boston, Mass., was an elaboration of the formation of the hard palate under the following scheme: First: The four types of the hard palate. (*a*) Well-rounded dental arch. The distance in a straight line from the center of the second molar on one side to a corresponding point on the other is about equal to the distance from either of these points to a point in the median line between the central incisors. The side lines form a equilateral triangle. (*b*) Narrower than the above and shaped more like the three sides of a parallelogram. (*c*) Angular, in which the sides of the arch are straight lines, not curved or bowed, and almost meet in a point in front. (*d*) Very much like (*a*) except that it is wider and larger. Second, the normal form of the palate. Third, the part played by the alveolar process in making the normal arch, and fourth, the causes of variation from the normal form which are (*a*) malocclusion of the teeth, (*b*) unequal growth between the parts of the septum, (*c*) low descent of the antra, (*d*) faulty shrinkage and readjustment of the premaxillæ and (*e*) asymmetry of the halves of the palate. The central idea of the paper was that asymmetry between the halves of the palate is due not always to asymmetry of the head as a whole but nearly as often to asymmetry confined to bones of the face. The teeth are the chief cause of this asymmetry. Accompanying the inequality in the two sides of the palate there is almost always a vomer spur and a deviation of the septum. The author discussed the questions of asymmetry in the skull as a whole, differences in skull according to age and the various ways in which such asymmetry is manifested. The paper was profusely illustrated by photographs and charts. The author believes that we have in the faulty eruption of the teeth, the anterior as well as the posterior, and in their faulty occlusion, the explanation of fully one half of the cases of asymmetry of the hard palate. We should, therefore, look after the proper eruption and spacing of the teeth and consequently should call the dentist to our aid.

Dr. D. Bryson Delavan, of New York, said he had never been able to understand why we found the high-arch palate so early in life. Occasionally it was present at birth, certainly often before dentition and occurred before we were able in any way to prevent it.

Dr. A. Coolidge, Jr., said that the face contained three sets of cavities, the mouth, orbits and nasal fossæ. The functions of these cavities demanded accurate adjustment of their parts. The cavities were so closely packed together that deformity of one tended to cause deformities in the others. Asymmetrical accessory sinuses he believed to be often a secondary effect rather than a primary cause of deformity, a correcting rather than a deforming factor. Whatever departures from typical growth we may prove or guess to be due to this factor or that, we can often trace the counteracting asymmetrical growth, attempting to minimize the disturbance of function which deformed jaws or deviated septum or a flattened orbit would cause.

Dr. B. Alexander Randall, of Philadelphia, thought that the element of heredity was a prominent factor in many of these cases.

Dr. John O. Roe, of Rochester, called attention to recent views expressed on this subject by various dentists. He said that the effect produced by the open mouth was a narrowing of the jaws by the lateral pressure of the muscles of the face that are drawn more or less tense. There was also the absence of the opposing pressure of the teeth against each other which greatly assists in maintaining their regularity during the period of their eruption. In the closed mouth the tongue also plays an important part in keeping the jaws, particularly the upper jaw, properly expanded.

Dr. D. Braden Kyle, Philadelphia, said that irregularity in development seemed to be largely confined to the upper jaw. This would indicate that nutrition played an important part in the development of these two structures. The blood and nerve supply of the upper jaw came largely through bony foramina. Might it not be possible that until a certain age these bony openings were sufficiently large to permit sufficient blood and nerve supply and that then from some slight injury or malformation their size was interfered with and became relatively too small for the proper nutrition?

Dr. Mosher, in closing the discussion, stated that the probable explanation of the high arch before the second dentition was the faulty shrinkage of the premaxillæ. They may swing down into proper position but do not shrink. Owing to this their vertical diameter is greater than normal. Therefore, in order for the posterior teeth to attain the level set for them by the anterior teeth, they must grow downward farther than usual. For these reasons the arch is high from the start.

CYST OF THE FRONTAL SINUS COMMUNICATING WITH THE FRONTAL LOBE.

Dr. Clement F. Theisen, of Albany, N. Y., reported a case of this nature occurring in a woman of thirty-four years, who had had, following a severe fall in childhood, severe head pains on the left side with a discharge from the corresponding naris. There was pressure and fullness over the eyes, some ptosis of the left lid, but no displacement of the globus. Transillumination seemed to justify an opening of the left frontal sinus and a fluctuating tumor suggesting a cyst presented at the incision. Considerable thin mucus escaped when it was opened, but this unfortunately was not examined. A considerable portion of the posterior wall of the sinus was missing and the cyst appeared to extend through to the frontal lobe. Pulsation of the meningeal vessels could be seen. The patient made a good recovery and ten months after operation she was well and free from headaches. The author referred to similar cases reported by Logan Turner and other writers. The literature on the subject is scanty.

NOTES ON TWO INTERESTING CASES OF FRONTAL SINUS DISEASE.

Dr. J. Price-Brown, of Toronto, reported the cases, the first patient being a woman with right frontal abscess on whom a previous operation had been done, leaving an open fistula, which discharged from time to time. Dr. Brown opened the sinus and chiseled out a rectangular piece of bone from the outer table, curretted the cavity and made a free opening down into the nose external to the septum and in the region of the anterior end of the middle turbinal. A gold tube was then inserted from above and the wound closed. Healing was satisfactory, but it was found impossible to irrigate the sinus through the tube. The discharge from the old fistula did not entirely cease; consequently twenty days later another operation was done embracing the area of the fistulous discharge. Some bits of dead bone were removed, the gold tube removed and a rubber one substituted, the outer incision being closed as before. Healing was satisfactory and the discharge entirely ceased. The author thinks that the wearing off of the gold tube for the interval between the two operations secured a dilatation of the passage into the nose which afforded permanent and effectual drainage. A photograph showed no perceptible deformity.

His second case was one of frontal sinus disease occurring in a man and following an injury. Several months later evidences of sinus involvement were evident and he came under observation with symptoms of acute trouble calling for immediate relief. Intranasal treatment failed to give the desired benefit, so the sinus was opened into above the superciliary ridge and the anterior cells of the ethmoid destroyed by drilling, a rubber drainage tube was introduced as before, the sinus cavity having been thoroughly curetted. The outer wound was closed and intranasal irrigation practised. Examination of the sinus contents revealed a pure pneumococcus infection and the wound did not heal by first intention and it was necessary to reopen it. Granulation commenced and irrigation carried out through a small rubber tube inserted down into the nose. This tube was eventually removed and healing was in the end satisfactory. Much benefit resulted from the use of the reversed Valsalva procedure in removing discharge during healing from the frontonasal passage. While in both cases the anterior ethmoid cells were engorged and the middle turbinal pressed tightly against the septum, in neither case was there any indication whatever of involvement of the maxillary antra.

SINUSITIS PYEMIA; SEVERE CEREBRAL SYMPTOMS. RELIEVED BY OPERATION, DEATH, AUTOPSY.

Dr. Lewis A. Coffin, of New York, reported one case in which the sequence of events is expressed by the title of his paper. His patient was a woman of thirty-three years who was admitted to hospital with unconsciousness, delirium and convulsions. There was an orbital cellulitis on the right side of the head, with swelling of the entire region, and it was believed that there was an empyema of the frontal and ethmoidal sinuses; furthermore that there was a commencing right-sided meningitis. It was later learned that she had been ill about a week. A Killian operation was done without incident except that the pus was found under high pressure. The bone of the posterior sinus wall appeared healthy. She did well for a few days but her temperature continued and a radical Caldwell-Luc operation was done on the right antrum and it was found filled with polypi. About this time she aborted with a three months fetus. Later infection spread from the uterus and various small swellings appeared on different parts of the body, these were opened and finally the patient seemed in fairly good condition. Later hemiplegia developed and brain abscess was suspected. Puncture just back of the frontal sinus at the roots of the hair evacuated considerable pus. Convulsions followed and she died two months after entering hospital. Autopsy revealed the entire right hemisphere covered with a thick purulent exudate on the inner surface of the dura which was firmly adherent to the pia-arachnoid. The opening of the abscess cavity which extended down into the white matter was on the superior surface of the right frontal lobe about midway between the anterior pole and the fissure of Rolando and lying in the superior frontal fissure and involving the contiguous parts of the superior and middle frontal convolutions. The author thinks that when the patient entered the hospital the bone was already infected and that an osteomyelitis and pyemia had already begun.

Dr. W. E. Casselberry referred to the difficulty, in such cases as that of Dr. Theisen, of making a differential diagnosis between true serous disease and serous exudate into a bony cavity. There was also great confusion in the nomenclature, as some writers use the term, serous cyst, and others, mucocele. Perhaps this was of greater importance in the antrum than in the frontal sinus. We have there the connection between dental cysts which are more common in the antrum than the similar cystic formation in the nose.

Dr. H. P. Mosher noted that sinus cases fell into two classes — chronic retention and chronic suppuration. There were many grades of mucocele, from the case in which but few of the mucous glands were diseased and but little mucus was poured into the sinus, to the case in which all glands were diseased and the cavity completely filled with their secretion. The larger the amount of blood in such a cavity, the more easily would it become infected. Many a case of chronic suppuration was originally a mucocele complicated with partial or complete hematocele. He would regard Dr. Theisen's case as one of uninfected mucocele.

Dr. H. L. Swain thought that sinus conditions were exactly similar in their pathological significance to aural conditions and that the use of the terms, serous, mucous and purulent, would be sufficient for a clear terminology.

Dr. C. P. Crayson, Philadelphia, questioned the advisability in such cases as had been reported by Dr. Price-Brown of introducing tubes to secure permanent drainage. If Laurens' method was followed, and then the opening of the frontal sinus and the removal of the anterior wall with thorough curettage of the cavity, breaking down all the anterior and posterior ethmoidal cells, gauze could be carried down into the nose and the external wound closed. Packing could be removed in thirty-six or forty-eight hours. He himself had not observed any great tendency to contraction of the drainage channel.

Dr. J. H. Bryan believed that there was a very great tendency to closure of the channel between the frontal sinus and the nose.

Dr. T. P. Berens, New York, said that the whole proposition could be expressed in the statement that the success of any operation upon the frontal sinus depended upon complete drainage and this could be secured only by complete removal of the anterior ethmoidal cells.

Dr. L. A. Coffin referred to a case of large retention cyst causing exophthalmos. On opening the anterior ethmoid cells by resection of the frontal process of the superior maxillary bone, he found a cavity as large as an English walnut, the contents of which were sponged out in one gelatinous mass. The orbital wall was necrotic and the cavity connected with the orbit. As to drainage tubes, they were unnecessary in the Killian operation. He had been called on to do a secondary operation but once and that was owing to the passing by in the primary intervention of a very narrow supra-orbital recess.

HYPERPLASIA LATERALIS LINGUAE: PAPILLITIS ATROPHICANS BILATERALIS LINGUAE.

Clinical histories of patients presenting respectively these two conditions were read by Dr. Henry L. Wagner, San Francisco. Case 1 was that of a man of forty years, an inveterate cigarette smoker, with some dental defects and a narrowed lateral diameter of the lower jaw. There was a hyperplasia of the superficial structures of the side of the tongue with similar pathological conditions of both lower turbinals. The patient complained particularly of a lancinating pain caused by a very small ulcer in the center of the hyperplastic lingual tissue. A thorough extirpation of the area complained of relieved all symptoms. Microscopical examination of the tissue removed showed a true hyperplasia of all the layers of the mucosa. The epithelial layer was thickened and on the apices of the papillæ showed a tendency to keratosis. The corium showed no alteration in its elastic and connective tissue fibers other than a marked overgrowth of the ordinary papillæ.

Case 2 was that of a woman of fifty-four years with small whitish vesicles similar to herpes on the left side of the tongue, occurring at regular intervals and accompanied by general malaise. A few days subsequent to each attack a subacute inflammation followed. Bilateral atrophy gradually set in but a prolonged iodide treatment has prevented recurrence for nearly a year. The microscope showed a thinned but dense epithelial layer, a deeper layer corresponding to the rete mucosum and a loose fibrous structure of the corium with almost complete obliteration of the secondary papillae. Few mucous glands remained. No lump or nodule appeared in the tongue. The condition suggested but for the atrophy the parenchymatous hemiglossitis described by Butlin.

Dr. J. P. Clark asked how Dr. Wagner would rule out pemphigus of the tongue as a possible diagnosis in his second case?

Dr. J. H. Bryan thought that one did not get atrophy with pemphigus in this situation.

Dr. J. W. Farlow had seen several cases of pemphigus of the mouth, but in that disease the eruption is bullous and not vesicular as in Dr. Wagner's case. He had not seen atrophy follow bullæ and would not consider this case as one of pemphigus.

Dr. Wagner admitted that the examination made at the time of eruption did not coincide with all the desiderata to make a diagnosis of pemphigus and he had simply left this question open, being glad to have light thrown on the matter.

SARCOMA OF THE TONSIL.

One case was reported by Dr. J. Edwin Rhodes, of Chicago. His patient was a man of thirty-five years whose symptoms had begun some six months previously with pain at the angle of the jaw. He had lost flesh, retained his appetite, but had some difficulty in swallowing on account of the size of the growth. Recently he had had attacks of dyspnea; also slight bleeding from the mouth. No external glandular enlargement could be made out, but a growth ran from the left tonsil two thirds of the way across the fauces. It was pinkish, lobulated, easily penetrated by a smooth flat probe and showed indistinctly blood vessels over its surface. Removal was determined on and the external carotid artery was first tied on the left side, local anesthesia being used. This was a difficult operation, as in order to breathe the patient had to keep his head flexed and chin lowered. Following this cocaine and adrenalin were injected freely into the base of the tumor through the anterior pillar. The mass was gradually enucleated, but, owing to the patient's retching, it had to be removed in fragments in several attempts. Bleeding was slight, but following removal of a small fragment of the tumor it was profuse for a moment or two. Pressure with gauze soaked in adrenalin sufficed to check it after the patient had become faint and his vascular pressure lowered. Recovery was without incident except that a small ligature abscess occurred. The author believed his operation sufficiently radical, and except when he cut through and removed a part of the posterior pillar, no pain was complained of by the patient. The microscopist reported round-celled sarcoma of the alveolar type. Seen one month after operation the patient showed a small mass in a new site on the lateral wall of the pharynx behind the posterior pillar. No second operation was deemed immediately necessary, and as the patient was leaving for his home city, he was advised to use the x-ray treatment and if possible to take the Coley toxins. He is reported now as doing well, but in view of the laboratory findings given in full detail in the paper Dr. Rhodes does not feel optimistic as to the eventual cure.

Dr. D. Bryson Delavan, New York, referred to the starvation treatment of such growths as elaborated by Dawbarn. It was quite possible that ligation of the carotid would be an advisable procedure before the extirpation of such tumors as the one described by Dr. Rhodes. Even if it did not result in cure, we would still have the alternative of the more extensive operation.

Dr. Rhodes replied that he would not expect much from such a procedure as ligation of the carotid as owing to the quick re-establishment of the collateral circulation, the inhibition of the growth would not result. The call for immediate operation in his own case was on account of the size of the tumor.

Dr. B. Alex. Randall, Philadelphia, had noted in a ligation such as that described by Dr. Rhodes entire absence of pulsation in the temporal artery for sixteen days. This would give some idea as to the time required for the re-establishment of collateral circulation.

THE INFLUENCE OF ADRENALIN IN THE CAUSATION OF ARTERIOSCLEROSIS.

This paper by Dr. Frederic E. Hopkins, of Springfield, Mass., was a review of the literature of the last four years. He finds that the unreliability of animal experimentation to date vitiates many of the conclusions drawn as to the deleterious effects of the remedy on the vascular system. Moreover it has been shown that large doses can be given continuously to patients without causing arteriosclerosis. He, therefore, feels that we have ample ground for reassurance in the reasonable use of the remedy.

Dr. C. F. Theisen, Albany, said that recent experiments had shown that atheroma of the vessels is customary only when the adrenalin is injected intravenously.

Dr. Harris P. Mosher had had some experience with guinea pigs, but in no instance did adrenalin applied to mucous membranes in the nose have any effect on the aorta.

Dr. B. Alex. Randall, Philadelphia, had used adrenalin with benefit on cases of exophthalmic goitre and in otitic vertigo. He had never seen any result on the vessels. He preferred for the conditions named the dessicated adrenals in doses of 2 or 3 gr., using the adrenalin chloride only as an emergency preparation which could be taken instantly at the first threat of trouble.

SYMPOSIUM ON RECURRENT AND ABDUCTOR PARALYSIS.

The first paper was by DR. J. W. CLEITSMANN, of New York City, who made some introductory remarks on the anatomy and physiology of the parts involved and then took up the matter of etiology from lesions of central origin. According to the location and nature of the disease we can distinguish paralysis due to cortical lesions, disturbances of the nerve tract in the internal capsule between cortex and bulbus, bulbar processes, syphilis, tumors, exostoses at the cranial base pressing on the pneumogastric, spinal disease and finally paralysis of the Avellis and Hughlings-Jackson type. As to paralyses due to cortical lesions, we are on a much-debated ground. The trouble arises from the fact that even in autopsies the bulbus is not always examined, so that the presence of a cortical lesion does not exclude a bulbar involvement in addition. In the author's view there are at the present time but few observers who believe in an unilateral laryngeal paralysis brought about by unilateral cerebral disease. Laryngeal movements can be excited by each of the two cortical centers independent of the loss or destruction of one of them. Furthermore, experimental extirpation of the hemispheres down to the fourth ventricle does not interfere with the respiratory movements of the cords, the integral function of the abductor. Progressive bulbar paralysis, being due to a degeneration of the motor nuclei in the medulla, represents a genuine type of the bulbar origin of laryngeal paralysis. As a rule paralysis of other organs, tongue, lips, etc., precedes laryngeal symptoms. The laryngeal picture will vary according to the focus and intensity of the process. Another bulbar affection is that caused by hemorrhage of this region, thrombosis with subsequent softening or embolism of the vertebral or basilar arteries. In meningitis we rarely have laryngeal paralysis. So, also, it is rare in multiple cerebrospinal meningitis. Syphilis of the brain may cause paralysis limited to the larynx. Tumors at the base generally cause laryngeal trouble by pneumogastric pressure. In locomotor ataxia, abductor paralysis is the prevailing type. So, also, laryngeal paralysis has been noted in amyotrophic lateral sclerosis and acute lepto-meningitis (spinal), syringomyelia and progressive muscular atrophy. Avellis drew attention to the occurrence of simultaneous unilateral paralysis of the larynx and soft palate. In another form the muscles of the neck are also paralyzed. Hughlings-Jackson called attention to associated paralysis of the pharynx, larynx and tongue.

(To be continued.)

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Book Review.

The Sexual Instinct, Its Use and Dangers as Affecting Heredity and Morals. By JAMES FOSTER SCOTT, B.A., Yale University; M.D., C. M., Edinburgh University. Second edition, revised and enlarged. New York: E. B. Treat & Co. 1908.

We have previously reviewed the first edition of this book in considerable detail. It is written with a purpose and in plain language which the character of the subject demands. The book in general remains, both in appearance and matter, as before. A chapter on Perversions has been dropped. Two new chapters have been added and certain changes made in the text. The book is written in a wholly serious spirit and should continue to be of value in the study of the important subject of which it treats.

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THE INTERNATIONAL CONGRESS ON TUBERCULOSIS.

DURING last week there gathered in Washington representatives from many parts of the world, brought together by a common interest, — the study and prevention of tuberculosis. In the program of the sections of the Congress appeared the names of many whose contributions to scientific medicine, particularly in the field of tuberculosis, will long remain of vital interest to generations of students of medicine. To hear them came from all parts of the country many of those who have taken an active part in the campaign against tuberculosis and a larger number of the rank and file of medical practitioners. To these are to be added many laymen, either participants in the section on hygienic, social, industrial and economic aspects of tuberculosis, or feeling an interest in the subject as a problem intimately touching the daily life of thousands of mankind. Not only could this throng discuss and listen (we do not say hear), but see, for in the building where the meeting was held was gathered a vast exhibit graphically showing the tuberculosis work. The speakers, the audience, the exhibit constituted the International Congress on Tuberculosis.

The meeting is over; the good results are just beginning. The Congress has served as a stimulus to many workers in tuberculosis, it has aroused interest where interest has been lacking, it has impressed on the American public the vast importance to them of tuberculosis and probably paved the way for a far stronger fight against the disease and it will, we hope, show to our foreign guests as they visit our cities that we, Americans, have made much advance in medicine and propose to make far more.

The Congress in a way represents three years' progress in tuberculosis. It would not seem that this Congress has brought out much that is essentially new from a scientific point of view, but rather has it shown great advances in methods of handling the tuberculous so as to prevent the spread of the disease and to cure the individual. As a result of the actual application of these methods a very strong optimism seemed to pervade the Congress that eventually, even shortly, tuberculosis would be well controlled and its ravages largely checked.

No part of the Congress aroused as much general interest as the discussion as to the transmission of tuberculosis from cattle to man. In this the views of Koch and the Germans were very generally opposed and the Congress put itself on record as regarding bovine tuberculosis as a serious menace to man. This, however, is a question to be decided by investigation rather than by vote, and it must be admitted that much of Koch's contention is supported by observed fact, while on the other hand he himself seems to take somewhat less strong grounds against transmission from cattle to man than he did at the British meeting of the Congress. Three years hence a more categorical answer to the question may be given.

The Congress has clearly shown the need in Washington of suitable auditoria for international and national meetings of large size. Poor acoustics in the meeting halls prevented many from hearing the speakers, and perhaps this is the chief adverse criticism that should be made of the arrangements for the Congress. The exhibition hall, with its excellent method of display of the very complete, attractive and instructive exhibits, was the best feature to many, and probably here more was learned of tuberculosis and its problem than elsewhere in the Congress.

Every International Congress has received just criticism of some features of its management. The same may be said of this Congress, some defects in its management being not only apparent but obtrusive, yet all in all it was a success and to the many who worked faithfully in its preparation the American medical public owe a debt of gratitude.

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TREATMENT OF TABES.

Apart from the great improvement which has resulted from the treatment of the inco-ordination of tabes by co-ordinative exercises, little has been accomplished in ameliorating the conditions of the disease. It has been adequately demonstrated that an antispecific treatment which has long found favor among certain practitioners is wholly inefficacious when the disease is well developed. Like many other conditions, it is becoming increasingly evident that if treatment of any sort is to accomplish positive results, it must be undertaken in the incipient stage of the affection. In this connection, while extremely skeptical as yet of the significance of his findings, we are willing to call attention to a paper on the subject of locomotor ataxia, read Oct. 1, before the New York Academy of Medicine, by Dr. Le Grand N. Denslow. Dr. Denslow's conclusions are based on 30 cases which he has carefully studied. Four years ago, when a tabetic patient applied to him for treatment, Dr. Denslow discovered accidentally that there was an ulceration in the genito-urinary tract and was surprised to find that when this had been cured by local treatment the ataxic symptoms began to disappear. This led him to look for similar lesions in the persons of other tabetics, and in these, also, the results from such local treatment were most gratifying. The lesions he had observed in various cases were met with in the urethra, bladder and rectum, and were perhaps most frequently found in the deep urethra. He did not claim by any means that after organic changes had actually occurred in the posterior columns of the cord and the posterior spinal nerve roots the local treatment of pelvic lesions would have any effect upon the tabes, but it appeared to him that, before the sclerosis resulted, there was a period, of greater or less duration, of functional disturbance, with symptoms of the character ordinarily associated with tabes, and that such functional disturbance, which, unless interfered with, would eventually terminate in organic change, was originated and maintained by the peripheral source of irritation. It was not necessary that this peripheral irritation should be located in the genito-urinary tract or rectum. It might perhaps have its situation in almost any part of the body, and in women was no doubt likely to be in the uterus, ovaries or tubes. Whether this theory be correct or not, the fact remains that a certain number of cases characterized by the ordinary symptoms of tabes have been ameliorated (at least for the time) by the local treatment carried out by Dr. Denslow, or, possibly, as seems on the whole much more probable, on account of the great susceptibility of the patients to suggestion. The fact of the benefit received is attested by no less an authority than Dr. M. Allen Starr, Professor of

Neurology in Columbia University, who stated in a letter read by Dr. Wyeth, President of the Academy of Medicine, that he had sent seven cases to Dr. Denslow for treatment, and by Dr. Richard H. Cunningham, for many years chief of the clinic for nervous diseases at the Vanderbilt Clinic connected with Columbia, who had also sent some cases.

MEDICAL NOTES.

Bubonic Plague in the Azores. — Telegraphic reports are to the effect that bubonic plague is increasing in Terceira, one of the group of Azores Islands.

Centenarian. — The death of the Rev. Alexander Mans, at London, Ontario, is announced, at the reputed age of one hundred and eighteen years. For many years he was minister of a colored Baptist church in that town. He was born in slavery, but at the age of fifty, escaped to Canada, where he has since remained.

Wesley M. Carpenter Lecture. — On Thursday, Oct. 8, 1908, at 8.30 p.m., the "Wesley M. Carpenter Lecture" will be delivered by Dr. German Sims Woodhead, Professor of Pathology in the University of Cambridge, at the New York Academy of Medicine.

Subject: "Some Phases of the Evolution of Modern Preventive Medicine as Illustrated by the Present Campaign against Tuberculosis."

After this lecture there will be given a reception by the President and Fellows of the New York Academy of Medicine and the committee on entertainment of the International Congress on Tuberculosis to the visiting members and delegates of the Congress.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Oct. 6, 1908, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 74, scarlatina 39, typhoid fever 18, measles 23, smallpox 0, tuberculosis 53.

The death-rate of the reported deaths for the week ending Oct. 6, 1908, was 17.78.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Oct. 3, 1908, was 212, against 207 the corresponding week of last year, showing an increase of 5 deaths and making the death-rate for the week 17.86. Of this number 121 were males and 91 were females; 205 were white and 7 colored; 147 were born in the United States, 64 in foreign countries and 1 unknown; 46 were of American parentage, 137 of foreign parentage and 29 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 69 cases and 5 deaths; scarlatina, 41 cases and 1 death; typhoid fever, 15 cases and 1 death; measles, 22 cases and 1 death; tuberculosis, 48 cases and 19 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 14, whooping cough 1, heart disease 18, bronchitis 3 and marasmus 13. There were 14 deaths from violent causes. The number of children who died under one year was 60; the number under five years 75. The number of persons who died over sixty years of age was 45. The deaths in public institutions were 85.

Cerebrospinal meningitis, 2 cases.

Centenarian.— John J. Moran, said to be one hundred and six years old, died at Lowell, Mass., Sept. 29.

Registration in Medicine. — At a recent examination, held by the Massachusetts State Board of Registration in Medicine, of 69 candidates, 37 passed.

Visit to Boston of Tuberculosis Delegates. — About fifty of the delegates attending the recent International Congress on Tuberculosis in Washington are visiting Boston through the invitation of the Boston committee. It is expected that Dr. Robert Koch and Dr. R. W. Philip will be of this party. On Wednesday a breakfast was given by the city, in honor of the foreign delegates, at the City Club. They were also entertained in Brookline, and by Dr. James J. Minot in Milton.

Lecture in Connection with International Congress on Tuberculosis. — Dr. R. W. Philip, Honorary Physician to the Royal Victoria Hospital for Consumption, Edinburgh, gave a lecture under the auspices of the International Congress on Tuberculosis, Oct. 7, at Jordan Hall, in Boston. The use of the hall was given by the managers of the New England Conservatory of Music, and the meeting, which was in charge of the Boston Association for the Relief and Control of Tuberculosis, was presided over by Dr. Vincent Y. Bowditch.

Typhoid Fever in the Brighton District.— A number of cases of typhoid fever, recently observed in the Brighton District of Boston, have been traced to a certain milk establishment. It is probable that the infection was conveyed through contamination of the milk by a voluntary boy helper who later became seriously ill with the disease. It was shown that he had continued this work of helping after the disease had manifested itself. There is no reason to anticipate any spread of the disease.

NEW YORK.

Illegal Selling of Cocaine. — Two young frequenters of Chinatown, who had been convicted of selling cocaine in that district, were recently sentenced by Judge Malone to one year's imprisonment in the penitentiary.

New Buildings for Chronic Insane. — The new buildings for the chronic insane at the Hudson River State Hospital at Poughkeepsie have been completed, and recently two hundred patients were transferred there from the Kings Park Hospital and the Central Islip Hospital, on Long Island, at the request of the State Commission in Lunacy, in order to relieve the congestion at these institutions.

Prize for Examination in Surgery. — Mrs. Emily Arnold has offered a yearly prize, of the value of the income from $2,000, in the University and Bellevue Hospital Medical College, for the best examination in general surgery among the members of the graduating class. This prize is in memory of her husband, the late Dr. Glover C. Arnold, of New York, who was graduated from Bellevue Hospital Medical College in 1873, and is to bear his name.

A Centenarian Congratulation. — On the occasion of the official notification, on Oct. 1, of the nomination for governor, of Lewis Stuyvesant Chanler, the first person to congratulate him at the conclusion of his speech of acceptance was Mrs. Mary Sullivan, one hundred and six years old. Mrs. Sullivan was led forward by her son, the head gardener on the Chanler estate, near Barrytown-on-the-Hudson, and her good wishes were expressed in Gaelic. She has lived at Mr. Chanler's country-place for seventy years, ever since her arrival in America, and yet speaks no tongue but this.

Electrocution. — Dr. R. T. Irvine, who up to July last had been physician to Sing Sing prison for seventeen years, has confirmed Dr. Rockwell's opinion as to the thoroughness of the electric current, as used in executions, in destroying life. In commenting recently on the suggestion of Coroner Shrady that a scientific doubt exists and that the apparent death may be only suspended animation, he stated that he had been present at 64 electrical executions and that there was no doubt whatever in his mind that all these criminals were absolutely and instantaneously killed by the shock. The changes which were always found post-mortem, and which he described in detail, were such that he believed it would be utterly impossible to resuscitate any subjects in which they had been produced.

Dinner for French Commission on Tuberculosis. — On Sept. 23 the commission of twelve physicians, headed by Prof. Louis Landouzy, dean of the Faculty of Medicine of Paris, appointed by the French government to investigate the agencies employed in this country for the suppression of tuberculosis, arrived in New York from Canada and Boston, and were tendered a complimentary dinner at the Café Martin by a number of prominent physicians and others. Among the speakes on this occasion were Prof. Adolph Cohn, of Columbia University; Dr. S. Adolphus Knopf, and Dr. John N. Brannan, president of the trustees of Bellevue and Allied Hospital, the last named representing Mayor McClellan. The distinguished visitors were on their way to Washington to attend the International Congress on Tuberculosis, and while in New York were taken to as many institutions as their limited time would permit.

National Volunteer Emergency Service. — The seventh annual meeting of the National Volunteer Emergency Service was held in New York on Oct. 3. The director-general, Dr. James Evelyn Pilcher, presided and made an address in which he spoke of the services rendered by the organization in a number of elevated railroad and other accidents during the past year. At present it maintains four ambulances, which are subject to call at all hours, and these are under the direction of physicians who are teachers in the Service school for instruction of first aid to the injured. It was stated that the first brigade of the National Volunteer Emergency Service had been established under the direction of Dr. H. A. Hanbold, clinical professor of surgery in the University and Bellevue Hospital Medical College, with whom were associated Dr. L. T. Griffiths, of the United States Army, and Dr. S. J. Kopetsky, assistant surgeon to the Manhattan Eye, Ear and Throat Hospital. Dr. Franklin E. Davis, adjutant-general of the Service, stated that $15,000 had been subscribed towards a hospital in Manhattan, and among the other speakers was Bishop Greer, who on this occasion accepted the appointment of chaplain-general of the organization.

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Current Literature.

Annals of Surgery.

September, 1908.

1. *Coley, W. B. *The Treatment of the Undescended or Maldescended Testis associated with Inguinal Hernia.*
2. *Starr, F. N. G. *Operation for Undescended Testicle.*
3. Berg, A. A. *The Radical Treatment of Carcinoma of the Bladder.*
4. *Swinburne, G. K. *Disturbances due to Disease of the Verumontanum and its Treatment with the Posterior Urethroscope.*
5. Gage, H., and Beal, H. W. *Fibrinous Calculi in the Kidney.*
6. Seelig, M. G. *Hematuria as a Complicating Factor in Appendicitis.*
7. *Taylor, A. S. *Volkmann's Ischemic Paralysis.*
8. *Cobb, F. *Recurrent Dislocation of the Ulnar Nerve.*
9. *Huntington, T. W. *The Operative Treatment of Recent Fractures of the Femoral Shaft.*
10. *Lusk, W. C. *Reduction of Supracondyloid Fracture of Humerus.*
11. Van Kaathoven, J. J. A. *Twenty-five Hundred Cases of Gas-Ether Anesthesia without Complication.*

1. After briefly reviewing the history of the study of ectopia testis, Coley presents a series of 126 cases of undescended or maldescended testis, associated with inguinal hernia, upon which he performed 128 operations. Among these cases there was no instance of sarcoma of the testis. The operative procedure employed was careful freeing of the cord and ligation of the hernial sac as high as possible, placing the testis in the scrotum, and closing the inguinal canal by the modified Bassini method, without transplantation of the cord. There was but one recurrence of the hernia. Coley believes it rarely necessary to sacrifice the testis, and finds that the subsequent maintenance of its position is not aided by attempts to anchor it with sutures, which he therefore disapproves. He considers the optimum period for operation to be between the eighth and twelfth years of age, unless the accompanying hernia demands earlier intervention.

2. Starr describes a silver wire splint which he used successfully in a case of undescended testis to hold the testis in position after operation. The testis is secured to the splint by catgut sutures through the tunica albuginea, the splint pushed down into the scrotum, and its lower end brought out through a secondary incision. This moors the testis till the sutures are absorbed, when the splint is withdrawn through the lower wound. Starr believes this procedure will permanently prevent retraction of the testis, but the method is open to obvious risks and objections.

4. Swinburne describes his posterior urethroscope, which he has found of value in treating both post-gonorrheal and non-venereal lesions of the verumontanum, symptomatized by premature ejaculation, frequent nocturnal emissions, and neurasthenic status. In such cases he recommends the direct application to the verumontanum, through the urethroscope, of 10% silver nitrate on a cotton swab, repeated once a week for from one to three months, and reports three cases thus treated with marked benefit. He does not advise the use of the instrument while gonococci can still be demonstrated in the genito-urinary tract.

7. Taylor reviews the subject of Volkmann's ischemic paralysis, a flexor-contracture, usually of the forearm and in children, after the application of too tight apparatus for fracture, generally near the elbow. He collects from the literature 58 reported cases, to which he adds one of his own observation. For treatment of the established condition he recommends subperiosteal resection of radius and ulna, at different levels, shortening the arm sufficiently to allow simultaneous extension of both wrist and fingers. Neurolysis of the median and ulnar nerves should also be done.

8. In continuation of his previous paper on the same subject in the *Annals of Surgery* for November, 1903, Cobb reports his second case of recurrent dislocation of the ulnar nerve cured by operation, being the twenty-third on record. The condition may be congenital, but more commonly follows trauma or serious infection about the elbow with extensive suppuration. Only severe cases demand operation for relief of disabling pain. Cobb's procedure is to replace the nerve in its normal channel and secure it there by suturing over it a flap of fibrous tissue from the triceps fascia.

9. Huntington urges a stricter standard of "satisfactory result" after femoral fracture, and advocates early operation in cases in which x-ray shows that good position is not maintained by apparatus. He regards Lane's modification of Jacob's steel staples as the best means of fixing the fragments, and describes and illustrates his manner of applying them and of making mechanical traction on the leg during operation.

10. Lusk describes his method of reducing supracondyloid fracture of the humerus by preliminary hyperextension of the forearm and maintaining the position by extreme flexion, and reports 4 cases thus treated, with admirable x-rays. [R. M. G.]

Surgery, Gynecology and Obstetrics.

September, 1908.

1. *Seelig, M. G. *A Further Aid in the Diagnosis of Esophageal Stenosis.*
2. *Kretschmer, H. L. *The Pathology and Cystoscopy of Cystitis Cystica.*
3. Beilby, G. E. *A Clinical Study of Hypernephroma, with Pathological Reports.*
4. *Wrede, L. *A Criticism of the Treatment of Acute Suppurative Infections by Passive Hyperemia and Cupping as Advocated by Professor Bier.*
5. McWilliams, C. A. *Acute Post-Operative Dilatation of the Stomach.*
6. *McDonald, E. *Diffuse Peritonitis in Women.*
7. *Fowler, R. H. *The Relation of the Lesion in Appendicitis to the Leucocyte Count.*
8. Mastin, W. M. *A Résumé of the Surgical Treatment of Ano-Rectal Imperforation in the Newborn.*
9. Steindler, A. *The Paradox Position of the Pelvis in Scoliosis.*
10. *Knott, Van B. *Primary Sarcoma of the Liver.*
11. Flint, C. P. *Fracture of the Eminentia Capitata.*
12. Hultgen, J. F. *Cyst of the Thyreoglossal Duct.*
13. Parker, C. A. *A Healing Intussusception in a Case of Multiple Polypi of the Intestine.*
14. Kahn, M. *Subacute Perforation of the Stomach.*
15. *Mason, J. M. *Acute Cholecystitis in the Second Week of Typhoid Fever.*
16. Shephard, J. H. *A Practical Suggestion in the Reduction of Dorsal Dislocation of the Hip*

1. Seelig reports an interesting use of the x-ray, after passage of an esophageal bougie or the swallowing of a fine metallic chain, as a means of definitely locating a diverticulum. The procedure promises to be of occasional distinct value in the differential diagnosis of certain esophageal conditions.

2. Under the name of cystitis cystica Kretschmer describes, in the bladder, benign epithelial cysts, situated in the mucosa or submucosa, similar to those previously observed in the ureters and the renal pelves. He discusses their etiology, which he believes to be mechanic and irritative rather than parasitic, and describes their cystoscopic appearance.

4. Wrede's criticism of Bier's hyperemic method of treatment is a timely plea in favor of adequate incision and drainage. Without condemning Bier's method, he points out its disadvantages and dangers, and declares it to be a useful but limited accessory to primary surgical treatment.

6. In continuation of his paper in the *Annals of Surgery* for February, 1907 (reviewed in this Journal, Sept. 17,

1908, p. 376), McDonald presents a report of 50 cases of diffuse peritonitis in women, grouping them according to their causative organism and their source of origin. Of these, 42% were infections derived from the bowel, 26% from the pelvic organs independent of pregnancy, 24% were associated with pregnancy, and 8% were tuberculous. Of the 41 cases studied bacteriologically, streptococcus was present alone or mixed in 44%; colon bacillus in 32%; staphylococcus aureus in 15%; pyocyaneus, gonococcus and pneumococcus each in ¾%; tubercle in 1%. Streptococcic peritonitis presents the severest clinical picture and is the most fatal. The author believes that in cases which recover, phagocytosis plays a much more important part than the acquirement of bactericidal properties by the blood serum. Puerperal peritonitis may be due to a first infection through the genital tract at the time of labor or to the traumatic recrudescence of an old process in the tubes or appendix. In treatment, McDonald emphasizes the importance of Fowler position and rectal seepage, and mentions the possible future value of bacterial vaccines and of nucleic acid and nucleinate of soda.

7. From an elaborate tabulated study of 278 cases Fowler attempts to determine the relation of the white count to the nature of the lesion in appendicitis. He concludes that neither the numeric nor the differential count alone is of reliable value; but that the ratio between the two, as represented in Gibson's standard chart (see *Annals of Surgery*, vol. xliii, 485), furnishes information of definite diagnostic and prognostic importance. Even this, he believes, however, should not be interpreted apart from the clinical signs.

10. Knott collects from the literature 73 cases of primary sarcoma of the liver, to which he adds one of his own, and on the basis of this series makes an extensive study of the condition. Of the 28 cases operated on, 3 were free from recurrence at intervals of seven, nineteen and twenty-four months respectively. No case is reported as cured by Coley toxins. The writer reviews the technic of liver suture and describes his use of the modified Kousnietzoff needle. There is a copious bibliography.

15. Mason reports a case of acute cholecystitis, occurring in the second week of typhoid fever, on which cholecystotomy was done with recovery of a pure culture of typhoid bacilli from the contents of the gall bladder. The patient died of pulmonary hemorrhage from old tuberculosis. [R. M. G.]

The Lancet.

Aug. 29, 1908.

This is the students' number of the *Lancet*, containing regulations of examining bodies and a list of hospitals and medical schools in the United Kingdom.

There are no original articles.

[J. B. H.]

Sept. 5, 1908.

1. *Bradford, J. R. *Clinical Lecture on Certain Aneurysms of Cerebral Vessels.*
2. Barker, A. E. J. *An Extensive Enterectomy for Gangrene.*
3. *Gullan, A. G. *Exophthalmic Goiter; a Discussion on its Pathology and Treatment.*
4. Renton, J. M. *Some Points regarding Spinal Analgesia, with a Record of Fifty Consecutive Cases.*
5. Pochin, F. L. *An Application of Opsonic Methods in comparing Human and Bovine Tuberculosis.*
6. Glover, V. J. *Epidemic Infantile Diarrhea.*
7. Walker, E. *An Unusual Case of Chronic Bi-Nitrobenzene Poisoning.*
8. Moffat, H. A. *Case of Foreign Body in the Left Bronchus.*
9. Green, A. B. *An Outbreak of Cowpox.*
10. Cameron, C. A. *On a Localized Outbreak of Scarlet Fever presumably Attributable to Infected Milk.*
11. Taylor, H. S. *Case of Ectopic Gestation on the Goldfields.*

1. Bradford gives a clinical lecture on certain aspects of aneurysms of cerebral vessels. The frequency of these is considerable compared with aneurysms affecting vessels of similar size in other parts of the body. They are common in the big vessels where vasomotor mechanism has very little play. He describes the pathology of these dilatations and the vessels which are most frequently affected. They have been known to occur in childhood and are fairly common between twenty and thirty years, but the bulk of them occur in the first half of life before the fortieth year. The majority of cases are of syphilitic origin. He emphasizes the fact that it is impossible to gauge the state of the cerebral vessels from the state of the peripheral vessels. He describes four separate groups in this condition: First, those in which there are no symptoms; second, those cases where the patient simply presents the symptoms of cerebral hemorrhage; third, where the patient presents symptoms in greater or less degree of cerebral tumor; fourth, an interesting class of cases, the symptoms of which he describes in detail, characterized by an early apoplectic seizure followed by a period in which there are no marked symptoms of any kind, perhaps with the exception of some stiffness of the neck and occipital headache; fifth, a fatal seizure. As regards differential diagnosis, he recites cases where the symptoms led to the diagnosis of neurasthenia, and he emphasizes the danger of making this mistake.

3. Gullan describes the pathology and treatment of exophthalmic goiter, particularly as regards the serum treatment, and describes the details of 16 cases in which he has used rodagen and thyroidectin with considerable benefit. In some cases he advises surgical interference, but only after medical treatment has been given a thorough trial. [J. B. H.]

British Medical Journal.

Aug. 29, 1908.

1. Mouillin, C. M. *Address on the Significance of Some of the Symptoms of Appendicitis from the Point of View of the Urgency of Operation.*
2. Steuart, M. B. *Fibrolysin in Cicatricial Pyloric Obstruction.*
3. *Kingsford, B. H. *Case of Acute Intestinal Obstruction in a Hemophilic.*
4. Carmichael, E. S. *Some Points in the Anatomy and Pathology of the Hernial Sac.*
5. *Dick, J. S. *Treatment of Chronic Empyema by Hyperemia and Hypertransudation.*

SEVENTY-SIXTH ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION.

Section of Public Health and Forensic Medicine.

6. *Littlejohn, H. H. *Presidential Address.*
7. Des Voeux, H. A. *Discussion on Smoke Abatement.*
8. Barker, J. E. *National Military Service and National Physique.*
9. Walker, A. *Discussion on the Administrative Treatment of Phthisis.*
10. Bushnell, F. G. *Co-ordination in Pathology and Public Health.*
11. James, J. B. *Death Certification and Death Verification.*
12. Moore, S. G. *Discussion on Infant Mortality.*
13. Pritchard, G. E. *State Regulation of Proprietary Medicines and Foods.*
14. Travis, G. L. *The Hampton Interpretation of the Operation of Sewage Purification.*
15. McWalter, J. C. *Lodging Houses under the Public Health Acts, Amendment Act 1907.*

Section of Physiology.

16. Haldane, J. S. *Discussion on the Causes of Dyspnea.*
17. Beddard, A. P. *Observations on Pulmonary Ventilation in Disease.*
18. *Herring, P. T. *Changes in the Pituitary Body after Removal of the Thyroid.*
19. Earle, H. G., and Goodall, J. S. *Pancreatic Juice and Glycasuria.*
20. Anderson, R. J. *Some Notes on Suggestion on its Physiological Bearings.*
21. Goodall, J. S. *Appetite; an Attempted Analysis of the Physic Factor.*

Section of Anatomy.

22. Addison, C. *Discussion on the Teaching and Examination in Anatomy.*
23. Keith, A. *Discussion on the Mechanism of Respiration in Health and Disease.*

24. Patten, C. J. *Meso-Photography and its Application to Delicate Calixed Embryos.*
25. Smith, G. E. *Significance of Fusion of the Atlas to the Occipital Bone, and Manifestation of Occipital Vertebræ.*
26. Anderson, R. S. *Some Notes on the Hard Palate and Maxilla in Primates.*
27. Smith, G. E. *Right-Handedness.*

3. Kingsford reports an interesting case of acute intestinal obstruction due to intussusception in a hemophilic. He gives the genealogy in this case, showing number of hemophilics in the family and the clinical and post-mortem findings.

5. Dick reports a case of chronic empyema in which the sinus containing about two drams of pus daily had been in a stationary condition for three weeks. He created an artificial hyperemia by means of a Bier suction cup and caused a hypertransudation by using alternately a solution of sodium citrate-chloride, which caused a large increase in the discharge owing to increased osmotic pressure, and a mercury biniodide solution (1 in 2,000), which caused a decrease in the discharge. The results whether due to this treatment or not were excellent, and in a comparatively short time the sinus entirely healed up.

6. British Medical Association, Section of Public Health and Forensic Medicine. The first part of this section is devoted to a discussion on the smoke abatement, in which all phases of this question are considered.

18. Herring gives a preliminary note on the changes in the pituitary body after removal of the thyroid. He discusses the work previously done on this subject. His own observations have been confined to experiments on rabbits, cats and dogs, whose pituitary bodies have been examined at varying intervals after thyroidectomy. In addition to the increased production of colloid material in the pituitary body there were present localized proliferations of neuroglia and other more complex changes, which he describes. [J. B. H.]

Sept. 5, 1908.

EDUCATIONAL NUMBER.

This number of the *British Medical Journal* is devoted entirely to a description of various medical schools, hospitals, and institutions, of the United Kingdom. [J. B. H.]

Deutsche Medizinische Wochenschrift. No 34.

Aug. 20, 1908.

1. *Loeffler, F., Rühs, K., and Walter, E. *The Cure of Experimental Nagana. Third Communication.*
2. *Lockemann, G., and Paucke, M. *The Excretion of Atoxyl in the Urine.*
3. *Römer, P. *The Present Status of Anti-Pneumococcus Serum in the Treatment of Ulcus Serpens.*
4. Heile. *A New Operation for the Cure of Hydrocephalus.*
5. Liepmann, H. *Relative Eupraxia in Right-Sided Hemiplegia.*
6. Renner. *A Case of Anthrax Septicemia with Extremely Slight Reaction at the Point of Inoculation.*
7. Köhler, A. *Instantaneous Photographs with a Simple X-Ray Outfit.*
8. Macry, N. J. *A New Improved Concave Metreurynter.*
9. Herrnstadt, V. *Remarks on Appendicitis during Pregnancy.*
10. *Eichhoff, J. P. *Another Case of Infection with Vaccine.*

1. The writers report the cure of experimental nagana or tsetse fly disease in every instance by the combined use of arsenious acid by the mouth, and atoxyl subcutaneously, the drugs being administered in three increasing doses at intervals of five days.

2. As the result of extensive researches, Lockemann and Paucke report that atoxyl after subcutaneous injection is almost entirely excreted in the urine within twenty-four hours, for the most part unaltered. Small amounts of arsenic, however, may be found for a number of days after a single injection. A small amount of atoxyl is split up into its component parts, and the arsenic portion is partly excreted as such in the urine and partly retained in the body to be gradually excreted later by means of the hair.

3. Römer defends his anti-pneumococcus serum against the criticisms of Hippel and shows that if used early it will cure the great majority of cases of ulcus serpens of the cornea. He has cultivated the pneumococci from the ulcer and measured their virulence in a large number of cases, and shows that those cases which are not cured by the serum are due to pneumococci of very high virulence, and would do badly under any treatment. Parallel cases which were not treated with the serum showed in every instance of spontaneous recovery a low or absent virulence of the organisms present.

10. Eichhoff reports the case of a child with eczema of the face, which became infected with vaccine by being bathed in the same tub and the same water as his younger brother, who had recently been successfully vaccinated. [W. T.]

No. 35. Aug. 27, 1908.

1. Soltmann, O. *Clinical Lecture on Scrofulosis.*
2. *Neisser, A. *The Use of Arsacetin in the Treatment of Syphilis.*
3. *Wolff, A., and Mühsam, H. *Fixation of the Complement in Tuberculosis.*
4. *Bauer, R. *Alimentary Galactosuria in Jaundice.*
5. *Dammert, F., and Pariser, C. *Intermittent Fever in Tertiary Syphilis of the Liver.*
6. Telemann, W. *A Method for the Easy Finding of Eggs of Parasites in the Feces.*
7. Hönck, E. *Differences in the Temperature of the Two Axillae in Acute Appendicitis.*
8. Müller, F. *An Instrument for the Removal of Wax and Foreign Bodies from the Auditory Canal.*
9. Töpfer, H. *Morbicid, a New Disinfectant.*

2. Atoxyl has been shown by Uhlenhuth, Neisser and others to cure experimental syphilis in apes, and to prevent infection when used within a short time after inoculation of the syphilitic virus. The poisonous qualities of this drug, however, when used in man, have prevented its extensive employment in the treatment of human syphilis Ehrlich has, therefore, prepared an acetyl derivative of atoxyl which is less poisonous and which he calls arsacetin. Neisser has proved experimentally that arsacetin is fully as powerful against the syphilitic virus as atoxyl, and has also used it in a large series of cases of human syphilis. No cases showed signs of poisoning except for transitory irritation of the gastro-intestinal tract. Arsacetin, as well as atoxyl, does not seem to control the symptoms of syphilis so well as mercury, but this, according to Neisser, does not prove that its curative action is not as great. He recommends a combined treatment with atoxyl and mercury.

3. Wolff and Mühsam have demonstrated antibodies in the serum of tuberculous subject which, when combined with tuberculin, cause fixation of the complement. They were present in about one half of the cases of tuberculosis in all stages, in those treated with tuberculin as well as those who had not been so treated. There was no marked correspondence between those cases which contained antibodies and those which showed a tuberculin reaction.

4. Bauer has found alimentary galactosuria present in cirrhosis of the liver and also in catarrhal jaundice, though absent in obstruction of the common duct by gallstones and by new growth. He considers, therefore, that in catarrhal jaundice there is a disturbance of the function of the liver which cannot be accounted for on the supposition that the disease is caused merely by catarrh of the duodenum and a consequent plugging of the orifice of the common bile duct.

5. The writers report 3 cases of tertiary syphilis of the liver accompanied by intermittent or remittent fever of long duration. The cases showed symptoms on the part of the lungs, either persistent dry cough or pleuritis, and an erroneous diagnosis of tuberculosis of the lungs had been made in all of them. The liver was uniformly enlarged and not rough, so that the process was probably a diffuse syphilitic infiltration. The liver and spleen were both enlarged. The fever and other symptoms yielded very rapidly to specific therapy, although other forms of treatment had been entirely without effect. The patients all gave histories of previous infection, but did not show any other signs of syphilis at the time they were under observation. Tertiary syphilis of the liver should, there-

fore, be considered in the diagnosis of any obscure febrile affection of long duration, especially as the use of specific remedies is so promptly curative. [W. T.]

Münchener Medizinische Wochenschrift. No. 35.
Sept. 1, 1908.

1. Morawitz, P., and Pratt, J. *Some Observations in Experimental Anemias.*
2. Müller, O. *The Absolute Plethysmogram.*
3. Cohn, F. *The Limitation of the Use of the Pessary.*
4. *Capelle. *A New Contribution to the Subject of Enlarged Thymus in Basedow's Disease.*
5. Hecker. *Blood Findings in Periodic Acetonemia of Older Children.*
6. Koch, W. *The Origin and Treatment of Herniæ. III.*
7. Bendig, P. *The Kromayer Mercury Inhalation Treatment in Syphilis.*
8. *Küster, E. *A Dysentery Bacillus Carrier.*
9. Nast-Kolb, A. *Indirect Fractures of the Metatarsals.*
10. Wittek, A. *A Case of Extension Dislocation of the Atlo-Axoid Articulation.*
11. Simon. *Cases of Abortive Pneumonia.*
12. Wolff-Eisner, A. *The New Explanation of the Action of Tuberculin.*
13. Holzknecht, G., and Grünfeld, R. L. *The Technic of Needle Extraction.*

4. Capelle found in 3 cases dying suddenly from collapse after operation on the thyroid in Basedow's disease that the thymus was much enlarged. In the literature he found 60 such cases. The symptoms accompanying the collapse and death were those of the collapse of status thymicus. Reviewing his statistics the author believes persistent thymus is a part of the pathology of exophthalmic goiter, and the collapse after operations for exophthalmic goiter must be considered as actual thymus death.

8. Küster was able to isolate the dysentery bacillus (Shiga type) from the stools of a laboratory servant who was in perfect health at the time of examination. The man had been through a campaign in South Africa and had had dysentery there. At times after that he had watery stools but no symptoms. These watery stools yielded the Shiga bacillus. The period between the dysentery attack and the finding of the bacilli by Küster was about five years. The author considers this to be a case of an actual Shiga bacillus carrier. [R. D.]

Sept. 8, 1908.

1. *Schlaepfer. *A New Method of Testing the Gastric Function.*
2. Harnack, E. *Untoward Accidents in the Use of Apomorphin and the Relations between Retching and Muscular Lameness.*
3. Wiens and Günther. *Investigations on the Ophthalmo-Reaction in Tuberculosis. II.*
4. Liebermeister, G. *The Question of Tuberculous Changes produced without the Action of Tubercle Bacilli.*
5. v. Bayer, H. *The Problems of Modern Orthopedics.*
6. Bettmann. *Screw Mechanism for Treatment of Fracture of the Patella.*
7. Dehner. *Mastopexy for the Remedy of Pendulous Breasts.*
8. Dunger, R. *Acute Non-purulent Thyroiditis.*
9. Ohlemann, M. *Basedow's Disease.*
10. Reineke. *Isolated Oblique Avulsion of the Mesentery in Contusion of the Abdomen.*
11. Klingelfuss. *Mensuration and Dosage of X-Rays in Absolute Units. Röntgenolysis.*
12. Kopp, C. *Prostitution and its Regulation.*

1. Schlaepfer uses a test meal of soup made from normal proportions of proteid carbohydrate and fat, which supplies the proper physiologic stimulation to the stomach. The soup is colored with neutral red. By testing the urine the time of opening of the pylorus may be determined. The acidity of the stomach is judged in the usual manner, the neutral red being used as indicator. The pepsin content is judged from the color of the filtrate of the gastric contents. The author claims his test meal to be simpler of preparation than the Sahli test soup, and that with it more definite data as to the gastric function can be obtained. [R. D.]

Berliner Klinische Wochenschrift. No. 36.
Sept. 7, 1908.

1. Chiari, H. *Spontaneous Healing of a Complete Avulsion of the Left Lobe of the Liver.*
2. Mühlens. *Certain Febrile Tropical Diseases.*
3. Kothe, R. *The Neutrophilic Blood Picture in the Early Stage of Acute Appendicitis.*
4. *Franchini, G. *Contribution to the Chemical and Histologic Study of the Blood in Acromegaly.*
5. Möller, S. *Chemic Acholurie Icterus with Splenomegaly.*
6. *Nikitin, M. P. *The Bechterew " Toe Reflex."*
7. Rostowzen, M. J. *Kernig's Sign in Tetanus.* (Continued article.)
8. Falkinstein. *The Treatment of Gout.*

4. Franchini, in a study of several cases of acromegaly, found in most cases an eosinophilia, with changes in the proportions of the leucocytes. There is also a certain amount of lipemia and a constant increase in the mineral constituents of the blood.

6. Nikitin, in 35 cases of spastic paralysis, found both Babinski reflex and Bechterew reflex present in 57.1%; Babinski alone in 25.7%; Bechterew alone in 11.4%; absence of both in 5.7%. In the 17 cases where both reflexes were present, the Bechterew reflex was present on only one side in 6 cases. The fact that in 11.4% of the cases the Bechterew reflex existed without the Babinski gives the former a definite diagnostic value. [R. D.]

Die Therapie der Gegenwart. Heft 9.
September, 1908.

1. Minkowski, O. *The Drug Treatment of Acute Articular Rheumatism.*
2. John, M. *Tuberculin Therapy.*
3. Engel, C. S. *Blood Examinations in Medical Practice.*
4. Froelich. *The Treatment of Traumatic Neuroses.*
5. von den Velden, Fr. *The Posterity of Patients dead of Cancer or Phthisis.*
6. Fellner, O. O. *Psychoses of Pregnancy.*

Obituary.

JOHN PEASLIE BROWN, M.D.

Dr. John Peaslie Brown died in Springfield, Mass., Sept. 19, 1908, at the age of seventy-four years. He was best known on account of his long and useful connection with the State Hospital for the Insane at Taunton, of which he was for twenty-eight years the superintendent. Dr. Brown was born in Raymond, N. H., Oct. 12, 1833. He came of good old New England stock, his ancestor, John Brown, having come to this country and settled in Hampton, N. H., in 1639. He was fitted for college at Philips Academy, at Andover. He graduated from the Academic Department of Dartmouth College in 1860. He spent a year as a tutor in a private family and entered the Harvard Medical School in 1862, graduating with the class of 1865. He immediately secured a position as assistant physician in the Insane Hospital at Concord, N. H., where he remained until 1878. In this year he was appointed superintendent of the Hospital for the Insane at Taunton, a position which he filled with advantage to the patients, with much acceptability to the trustees and with credit to himself until 1906, when he resigned on account of his health, which was doubtless affected by the loss of his wife in that year. Dr. Brown was a member of the Massachusetts and New Hampshire State Medical Societies, of the New England Psychological Society and of the New England Medico-Psychological Society.

RECORD OF MORTALITY

For the Week ending Saturday, Sept. 26, 1908.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	9	1
Chicago	583	217	Waltham	7	1
Philadelphia	399	122	Pittsfield	—	—
St. Louis	—	—	Gloucester	8	4
Baltimore	175	58	Brookline	6	—
Cleveland	—	—	North Adams	5	1
Buffalo	—	—	Chicopee	2	2
Pittsburg	—	—	Northampton	8	3
Cincinnati	—	—	Medford	5	1
Milwaukee	—	—	Beverly	5	2
Washington	—	—	Leominster	4	1
Providence	—	—	Hyde Park	—	—
Boston	253	89	Melrose	4	0
Worcester	35	14	Newburyport	—	—
Fall River	45	34	Woburn	3	1
Cambridge	33	16	Westfield	5	—
Lowell	37	15	Marlboro	3	0
Lynn	24	7	Revere	2	1
New Bedford	36	18	Attleboro	3	1
Springfield	—	—	Peabody	—	—
Lawrence	33	18	Adams	4	1
Somerville	18	8	Clinton	7	4
Brockton	6	1	Gardner	4	1
Holyoke	16	8	Milford	2	—
Malden	11	4	Watertown	0	—
Chelsea	6	4	Plymouth	—	—
Newton	11	2	Weymouth	5	2
Salem	11	3	Framingham	6	—
Haverhill	11	4	Southbridge	6	1
Fitchburg	11	3	Wakefield	—	—
Everett	9	5	Webster	—	—
Taunton	12	5	Arlington	3	—

LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND OTHER OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED SEPT. 23, 1908.

Eager, J. M., assistant surgeon-general. Directed to proceed to Philadelphia, Pa., upon special temporary duty. Sept. 24-26, 1908.

Nydegger, J. A., passed assistant surgeon. Granted extension of leave of absence for twenty-three days from Sept. 19, 1908.

Sprague, E. K., passed assistant surgeon. Granted leave of absence for seven days from Sept. 28, 1908.

Holt, J. M., passed assistant surgeon. Directed to proceed to Boise, Ida., upon special temporary duty. Oct. 8, 1908.

Wilson, R. L., passed assistant surgeon. Granted leave of absence for one day, Sept. 22, 1908, under paragraph 189, Service Regulations.

Long, J. D., passed assistant surgeon. Assignment for special temporary duty at Los Angeles, Sept. 9, 1908, revoked Sept. 12, 1908.

Bahrenburg, L. P. H., passed assistant surgeon. Granted extension of leave of absence for fourteen days from Oct. 11, 1908.

Stimson, A. M., passed assistant surgeon. Leave for one month and fifteen days from Aug. 17, 1908, revoked from Sept. 11, 1908.

Smith, F. C., passed assistant surgeon. Granted leave of absence for one month from Sept. 18, 1908.

Bowers, P. E., acting assistant surgeon. Granted extension of leave for eleven days, on account of sickness, from Aug. 22, 1908.

Browne, R. W., acting assistant surgeon. Granted leave of absence for one day. Sept. 15, 1908.

Cleaves, F. H., acting assistant surgeon. Granted leave of absence for four days from Sept. 15, 1908, under paragraph 210, Service Regulations.

Delgado, J. M., acting assistant surgeon. Granted extension of leave for three months, without pay, from Sept. 20, 1908.

Goldsborough, B. W., acting assistant surgeon. Granted leave of absence for five days from Sept. 16, 1908.

Kimmet, W. A., acting assistant surgeon. Granted leave of absence for thirty days from Sept. 20, 1908.

Lyall, R., acting assistant surgeon. Granted leave of absence for six days from Sept. 21, 1908, under paragraph 210, Service Regulations.

Marsh, W. H., acting assistant surgeon. Granted leave of absence for thirteen days from Oct. 10, 1908.

Naulty, C. W., Jr., acting assistant surgeon. Granted leave of absence for fifteen days from Oct. 4, 1908.

Rice, W. E., acting assistant surgeon. Granted leave of absence for seven days from Oct. 5, 1908, under paragraph 210, Service Regulations.

Stanton, J. G., acting assistant surgeon. Granted leave of absence for two days from Sept. 17, 1908, and excused without pay for twelve days.

BOARD CONVENED.

A board of medical officers was convened to meet at Fortress Monroe, on board quarantine barge "Jamestown" for the purpose of making physical examinations of cadets for promotion in the Revenue-Cutter Service, Sept. 25, 1908. Passed Assistant Surgeon G. L. Collins, chairman; Acting Assistant Surgeon H. W. Keatley, recorder.

PROMOTION.

Assistant Surgeon Wm. M. Wightman commissioned as Passed Assistant Surgeon (recess), to rank as such from July 25, 1908.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING OCT. 3, 1908.

Turner, H. W. B., Stanley. A. C., assistant surgeons. Detached from duty at the Naval Medical School Hospital, Washington, D. C., and ordered to course of instruction at the Naval Medical School. Oct. 1, 1908.

Allen, D. G., assistant surgeon. Detached from duty at the Naval Medical School, Washington, D. C., and ordered to course of instruction at that school. Oct. 1, 1908.

Schmidt, L. M., assistant surgeon. Detached from duty at the Naval Hospital, Annapolis, Md., and ordered to course of instruction at the Naval Medical School, Washington, D. C. Oct. 1, 1908.

Harlan, T., acting assistant surgeon. Ordered to course of instruction at the Naval Medical School, Washington, D. C. Oct. 1, 1908.

Porter, F. E., passed assistant surgeon. Detached from the Navy Yard, Washington, D. C., and ordered to the Naval Recruiting Station, Detroit, Mich.

Boland, M., assistant surgeon. Detached from the Naval Recruiting Station, Detroit, Mich., and ordered to the "Castine," when commissioned.

Brown, E. W., assistant surgeon. Detached from the Naval Hospital, Norfolk, Va., and granted sick leave for three months.

Johnson, L. W., Shippen, L. P., assistant surgeons. Ordered to course of instruction at the Naval Medical School, Washington, D. C., Oct. 1, 1908.

SOCIETY NOTICES.

New England Electro-Therapeutic Association. The twenty-fourth regular meeting will be held in the auditorium (third floor), Edison Building, 39 Boylston St., Boston, Mass., Friday, Oct. 9, 1908, at 8 P.M.

This meeting will be devoted to the reports of clinical cases and demonstrations of technic. Cases will be reported by the following members: Drs. A. B. Dorman, M. Reeves, W. T. Patch, J. L. Mahoney, W. D. McFee, F. C. Osman, W. D. Knowlton, C. J. Walsh and R. Bonney. The profession are cordially invited.

Samuel J. Harris, M.D., *Secretary.*

New England Hospital Medical Society This society will hold its regular meeting at Hotel Nottingham, Thursday, Oct. 15, 1908, at 7.30 P.M. Section of Gastro-Enterology, Dr. Agnes C. Vietor, Chairman.

Papers:

1. "The Question of Diagnosis in the Case of a Patient complaining of 'Indigestion,'" by Agnes C. Vietor, M.D.
2. "The Physical Examination of Such a Patient," by Marguerite S. Cockett, M.D.
3. "The Aid which the Laboratory can give in making the Diagnosis," by Evangeline W. Young, M.D.
4. "When do Such Cases become Surgical?" by Mary A. Smith, M.D.

Discussion will be opened by Emma L. Call, M.D.

Blanche A. Denig, M.D., *Secretary.*

BOOKS AND PAMPHLETS RECEIVED.

The X-Ray in Dermatology; or, Truth and Fallacy concerning X-Ray Dermatitis. By Albert C. Geyser, M.D. Reprint.

The Unfinished Business of General Hospitals. By S. S. Goldwater, M.D. Reprint.

Progressive Medicine. Edited by Hobart Amory Hare, M.D., assisted by R. H. M. Landis, M.D. Sept. 1, 1908. Philadelphia and New York: Lea & Febiger.

Original Articles.

THE PRINCIPLES UNDERLYING THE TREATMENT OF ACUTE INTESTINAL OBSTRUCTION: A STUDY OF ONE HUNDRED AND TWENTY-ONE CASES OF ACUTE INTESTINAL OBSTRUCTION FROM THE MASSACHUSETTS GENERAL HOSPITAL CLINIC.*

BY CHARLES L. SCUDDER, M.D.,
Surgeon to the Massachusetts General Hospital; Lecturer in Surgery in Harvard University, Boston, Mass.

Never before in the history of medicine has the subject of intestinal obstruction attracted more widespread attention than at present. We are all interested in the problems involved in these cases. Individuals suffering with intestinal obstruction first come under the observation of the physician. The surgeon should have a clear appreciation of the relative values of the clinical facts collected by the internist. The internist needs to know the accomplishments and limitations of surgical art applied to this, the gravest of emergencies.

Cases of intestinal obstruction are naturally arranged in two groups, *the non-mechanical* and *the mechanical.* The *non-mechanical* group includes those instances of abdominal pain, distention and vomiting with constipation seen under the following conditions: (1) Associated with an abdominal contusion. It is more than likely that the intestine is actually injured by the contusion of the abdominal wall. (Munro.) The obstruction resulting is not merely a reflex from the abdominal parietes, but may be dependent upon the intestinal lesion, and (2) those obstructions associated with abdominal inflammatory processes; as, for example, appendicitis. How often does the attending physician make the diagnosis of obstruction of the bowels when really there exists a primary appendicitis with a physiological cessation of peristalsis protective to the individual. (3) The obstruction seen associated with pneumonia. I have operated upon three or four patients, all children, for supposed appendicitis in which no appendicitis was found. In each of these cases subsequent to operation a frank pneumonia became well defined and upon the right side of the chest. (4) The obstruction seen with acute nephritis. (5) The obstruction met with after clean laparotomy wounds, due primarily to trauma or unrecognizable sepsis. The observations of Durham and Buxton upon peritoneal infections, and upon the part played by the omentum in such infections, and the observations of Robson and Stengel, strongly emphasize the view that the cause of obstruction in these cases is a mild degree of infection which may show no gross lesion. These cases have been spoken of hitherto as instances of peritonism, peritoneal infection, reflex obstructions, functional ileus.

All that one can say is that these are not the result primarily of mechanical conditions, but probably the result of infection. The infection probably acts directly or indirectly upon the neuromuscular intestinal mechanism. Such cases require, at least at the onset, rectal enemata, physostigma, if there is no gross sepsis, lavage of the stomach, the use of the rectal tube and possibly ileostomy or colostomy to temporarily relieve the physical condition.

The *mechanical group* includes the obstructions caused by a band and an adhesion, by a kink of the intestine, by an intussusception, a twist or volvulus, by a stone within the lumen of the gut, by a new growth and tumor pressing upon the outside of the bowel, by tumors growing in the wall of the bowel and by the various forms of hernia.

The individual is seized suddenly when apparently well with violent abdominal pain, vomiting and nausea, dejection from the rectum followed by constipation. A few hours later follow hiccough, slight meteorism and early signs of shock and collapse. He lies back in bed prostrate, with gaunt cheeks and sunken eyes. His pain has vanished but some haunting fear has taken its place. His hands wander with pathetic restlessness over the bedclothes and are cold and damp. Beads of sweat stand on his brow. His face is pinched, his expression vacant and staring, his voice is feeble. The pulse has sunken to an uncountable thread. There is regurgitation of blackish vomitus through mouth and nose. The breathing is labored and shallow and accompanied by faint sighs and perhaps by feeble inarticulate groans. The countenance is ashen and livid. Such a picture makes a reality of the metaphor, "the shadow of death." (Treves.) This is the only too familiar picture of an unrelieved acute mechanical intestinal obstruction.

How often the internist and the surgeon have, alone or together, gazed upon this picture in the dying and been powerless to save the sufferer. It is a startling fact that had the diagnosis been accurately made at the onset of the disease relief might have been afforded. Where does the responsibility rest? Either the physician was not summoned early, or, having been summoned, did not recognize the condition present, or the operator was inexperienced, or the case was one in which the lesion was a most virulent one.

In order to facilitate the early diagnosis and the most efficient treatment of acute intestinal obstruction, we require all the information that it is possible to gather from clinical experience, from experimental physiological and chemical data, from the post-mortem room and the operating table. It is to a very brief statement of the facts derived from these various sources that I wish for a moment to direct your attention. It is upon these facts that is based the present treatment of intestinal obstruction. These facts form the principles of treatment.

The anatomical or *mechanical* conditions associated with intestinal obstruction *formerly* naturally attracted *most* attention and concern. If the volvulus was detected and untwisted, if the strangulated band was divided, if the intussusception was reduced, at this point the surgeon's or physician's duty ended. He thought of little else.

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* Read at the annual meeting of the New Hampshire State Medical Society, Concord, N. H., May, 1908, and of the Minnesota State Medical Society, St. Paul, Minn., Oct. 8, 1908.

We understand to-day that not only must the surgeon determine the seat and the character of the obstruction, but he must also recognize the vital changes in the bowel and the general physical and vital changes in the individual and be guided thereby.

What happens in an acute intestinal obstruction? What changes take place locally in the bowel? What causes the great shock? Why is death so early?

Two notable factors are present in every intestinal obstruction. First, there is an obstruction to the passage of the normal intestinal contents, and second, there is an obstruction to the circulation in the wall of the gut.

The symptoms are out of all proportion to the first factor, the intestinal stasis. We know that prolonged fecal impaction may exist without such symptoms. Consider, then, the changes in the wall of the gut. These changes in the completely obstructed gut are very rapid. The hypertrophy and ulcerations of chronic stenosis are absent. There is no time for them to occur. The gut above the obstructing band is distended and dilated. The contents of the gut accumulate.

In from four to eight hours the vascular changes result in a marked venous stasis. The wall of the bowel becomes thick with edema. The contents of the gut change to a liquid, fecal matter containing serum and blood cells together with bacteria. The experiments of McClure demonstrate that the number of bacteria thus developed above the obstruction may become enormous. The distention of the gut may be very great.

The vascular stasis may be so pronounced as to cause blood to appear not only in the lumen of the gut, but also within the peritoneal space. At operation, therefore, a bloody fluid will be found within the abdomen. F. T. Murphy has demonstrated the vascular changes occurring in strangulated *animal* gut. He found that "obstruction to the venous flow produces much more prompt and serious symptoms than obstruction to the arterial supply of the gut. If the arterial supply was cut off the symptoms were fairly well marked after eighteen to twenty-four hours. If, on the contrary, the arterial supply was not cut off but the venous return was obstructed, the animal began within an hour to vomit, lose muscular tone and usually died in from twenty-four to thirty-six hours. The walls of the obstructed loop were found to be edematous, dusky and softened with bloody fluid in the abdominal cavity. There was found to be a disintegration and ulceration of the mucosa. There is always a microscopic and there may be a macroscopic perforation of the gut. The venous stasis is very serious."

It has been demonstrated by Mall and others that the intestine normally lives an independent life in a way. It has its own special nerve stimuli in the plexus of Auerbach. In these cases of obstruction the gut is paralyzed. There is eventually a cessation of peristalsis. The results of the experiments of Mall and Booker lend weight to the explanation that the paralysis of the gut is occasioned by the direct action of the toxins within the intestine upon the plexus of Auerbach. That is, the toxins within the gut reach the nerve cells directly.

Gas develops in the affected loop. This gas accumulates from above but may be developed from the putrefaction of nitrogenous material within the gut, or because of the damage to the intestinal wall there may be a diminution of the normal absorption of gas from the affected loop and consequently an accumulation may result. A distention of the strangulated loop may be one of the positive signs of intestinal obstruction. The local meteorism, or the sign of Wahl, as it is named, is always to be looked for in a suspected intestinal obstruction.

Bouchard thought that the cause of the symptoms present was the absorption of poisonous substances developed in the strangulated loop of intestine. He called this the auto-intoxication theory.

Kukula believes that not only toxic fluids but toxic gases may be absorbed from the intestinal loop. Albeck thinks that the accumulating intestinal poisons may be regarded as putrefactive poisons. Boeszky and Genersich consider the severer symptoms of intestinal obstruction as due to a general septicemia, largely a colon bacillus infection. Nesbitt and Clairmont and Ranzi think the auto-intoxication theory of Bouchard is the most plausible. McClure concludes that it is difficult to understand how a reflex through the intestinal nerves can explain the symptoms of intestinal obstruction as well as the intoxication theory.

Roger has recently advocated the auto-intoxication theory and suggests the idea of a syndrome of gastro-intestinal insufficiency. That is, it is possible that the secretions of the intestine above the obstruction are cut off and diminished, and just as there is a renal insufficiency and a thyroid insufficiency, so there may be a gastro-intestinal insufficiency. Reichel has demonstrated that obstruction to the lumen of the gut alone is insufficient to cause serious symptoms, but that there must be an infecton at the kink.

Dudgeon and Sargent have demonstrated that the intestine is normally impermeable to bacteria. Pathological changes of very slight degree and special lesions of the epithelium make penetration of the intestinal wall possible. The experiments of Birsch Herfeld, Wurtz and Hudala emphasize these facts. Any damage to the anatomical integrity of the gut permits permeability.

Bacterial toxins may cause an infection independently of any gross peritoneal changes. Obstruction without gross evidences of peritonitis may really be cases of chemical poisoning and no bacteria may be found within the peritoneal cavity.

Maury concludes from experimental work recently done that death in duodeno-jejunal obstruction may be due to the absorption of certain toxic elements of the bile which are normally harmless because of dilution and suspension in the secretions of the intestine rather than to bacterial infection. The greater the distance from the bile duct papilla to the obstructive point, the more dilute is the accumulated material and, therefore, the less toxic is it. The mortality, therefore, diminishes as the obstruction is lower in the gut.

Bond has demonstrated that the omentum takes care of a large number of bacteria at the initial infection, but that eventually, if the infection is severe, a peritonitis follows. It is of practical interest that possibly the peritoneal fluids thrown out may be bactericidal in their action, particularly if the bacteria are of little virulence. In other words, the peritoneum by this pouring out of fluid may be protecting the body against an invasion.

It is of interest in this connection that the peritoneum possesses the power of absorption of deleterious substances. Muscatello demonstrated that the upper peritoneum in the region of the diaphragm absorbs more than the lower region of the pelvis. Clark, basing postural drainage upon this fact, elevated the foot of the bed in order that the infectious material might be more rapidly absorbed. Fowler reversed this position and instead of permitting the individual to drain the infectious material into himself, raised the head of the bed and drained the peritoneal fluid into the pelvis and removed such material from the body by external drainage. Fowler thought that he thus avoided rapid absorption by the diaphragm.

Bond and Cannon have demonstrated reversed currents in the gut and normal reversed peristalsis. These facts Murphy, of Chicago, took advantage of and suggested the seeping of normal salt solution into the rectum in order that it might be rapidly absorbed from the wall of the gut and thus dilute the poison.

The cause of the pain of intestinal obstruction Lenander has recently demonstrated to be an irritation of the nerves of the mesentery and parietal peritoneum. Rough handling of the bowel through traction on the mesentery is, therefore, to be avoided in all intra-abdominal manipulations.

Feculent vomiting has been demonstrated to be dependent not only upon a contraction of the abdominal muscles and compression of the stomach directly, but to be caused by a reversed intestinal peristalsis demonstrated by Cannon.

The important and startling clinical fact in cases of intestinal obstruction is the profound intoxication, the toxemia, the genetal sepsis. The cause of this toxemia is an acute infection from the damaged gut.

These two fundamental conceptions must underlie and be the basis of every thought and every effort in the treatment of intestinal obstruction.

In the light of these later findings what should be the *treatment* of a *suspected* case of acute intestinal obstruction? The changes in the bowel are so rapid that, the diagnosis having been made, action should be immediate. Delay may mean death.

If there is doubt about the diagnosis, and the patient has abdominal pain without involuntary muscle spasm, is distended without a temperature, *no cathartics* should be given by mouth. If there is a beginning peritonitis it will be increased by the catharsis. If there is infection in any part of the abdomen the increased peristalsis occasioned by the cathartic will spread the infection to another part of the abdomen.

More harm is caused by the common practice of administering cathartics in the case of abdominal pain in which the diagnosis is uncertain than in almost any other way.

No *massage* should be given to the abdomen for fear of causing a perforation or of spreading the infection. The patient should be kept in bed and quiet. *No food* should be administered by mouth for fear of causing intestinal peristalsis and thus increasing the peritonitis. *No water* should be allowed to be swallowed. Very little water is absorbed directly from the stomach. The swallowing of water increases peristalsis. No *morphia* should be given until operation is decided upon or the diagnosis is made, for morphia will conceal symptoms. If there is vomiting the stomach should be washed out with warm water.

Ewald has recently called attention to an early symptom of intestinal obstruction. He says the stomach fills with intestinal contents very early in the obstruction, whether it be a mechanical or non-mechanical obstruction. One can obtain through a stomach tube material with a strong feculent odor at a time when many serious symptoms have not appeared. The stomach lavage may be repeated several times a day and a large amount of material obtained each time. I have not yet had opportunity to confirm these recent observations of Ewald.

An early diagnosis of intestinal obstruction is not always possible, but it is often possible if the significance of abdominal pain and vomiting without fever are duly considered.

Cases of intestinal obstruction are not common in any one man's experience. They are of rather infrequent occurrence.

Early diagnosis of acute intestinal obstruction permits early operative relief.

Early operation in these cases gives a low mortality, although, unfortunately, not always. As a magnificent illustration of what an early diagnosis may accomplish in the diminution of the mortality of acute intestinal obstruction, note the remarkable experience recorded by Clubbe in 1907 in cases of intussusception in infants. Clubbe has operated upon 124 cases of intussusception. He has had but 40 deaths, a mortality of 32%. Clubbe's last 24 cases, with 3 deaths, or a mortality of 12½%, is phenomenal. The mortality in mixed statistics of intussusception is as high as 52%. The reason for this splendid operative showing lies in the fact that the physicians about Sydney, Australia, where Clubbe practices, have come to recognize the meaning of the initial signs of intussusception, viz., the sudden screams of the child, the characteristic pallor and the vomiting. They have learned to properly interpret the apparent recovery from this acute onset and the recurring cries from peristaltic pain as a picture of acute intussusception, and having learned to interpret this picture, operation has been performed immediately with the resulting low mortality.

In studying any suspected intestinal obstruction it is not necessary to determine the *form* of obstruction, whether by band or adhesion, by Meckel's diverticulum, etc. It is sufficient to have determined that there exists a serious intra-abdominal operable intestinal lesion. In the very nature of things an infectious inflammatory process has certain well-recognized earmarks which seem to distinguish it from a purely mechanical process.

However, and here lies the trouble, if the mechanical difficulty is permitted to run along for several days, then there is added to the picture the inflammatory framework. It is then almost impossible to distinguish the one process from the other. One may, by a clear history of the onset of the attack and its progress, make a definite diagnosis of intestinal obstruction. Herein lies the wisdom of carefully considering the patient's story and weighing the evidence. We should, all of us, continually carry in our mind's eye the possible types or varieties of intestinal obstruction, from the acute pyloric stenosis of early infancy to the chronic obstruction from carcinoma in old age. The two great classes: (1) the non-mechanical. The distended paralyzed intestine associated with an acute infection. (2) The mechanical. The kinks and twists of coils held snugly against one another. The bands from old inflammatory processes. The intussusception of childhood. The volvulus of adult life. We should be familiar with the pathological changes occurring in these various types of obstruction.

There is no disease the proper treatment of which depends more upon a true conception of the pathology than does intestinal obstruction.

The operation. — The operation for intestinal obstruction should be early.

The incision should be made in the median line below the umbilicus.

In early post-operative ileus the incision had best be made through the clean abdominal wall and not through inflamed tissues, so that the probable site of the obstruction may be reached directly. There is then less danger of infecting the clean peritoneum.

1. If the patient is very ill it may be wise to simply, by local anesthesia, open the presenting distended loop and tie in a curved glass tube. This may relieve the immediate distention and allow gases and liquids to pass by what otherwise might become a permanent kink or twist. In such a case no attempt should be made to find the seat of the obstruction at the primary operation. These are desperate cases.

2. Upon opening the abdomen in a case which will permit of more prolonged operation, the *collapsed* gut should be looked for and followed to the seat of the obstruction. It is difficult to handle distended intestine.

The band should be first divided. The intestine above the obstruction, which is filled with bacterial and toxic products, virulently infectious, should then be emptied of its contents.

The method suggested by Monks, of Boston, is a good one — the threading the intestine upon a glass or metal tube. Several feet of intestine may in this manner be pulled up on to the tube and the contents evacuated.

If this seems undesirable, then the intestine may be washed out by the method recently advocated by Monks, i.e., opening the distended coil of gut, passing in a glass tube connected with a fountain of hot sterile salt solution and washing down an indefinite distance, opening below, reintroducing the tube and washing again; thus by two or three washings a large part of the intestinal tract may be rid of the harmful and toxic contents, which is replaced by hot stimulating salt solution. The effect upon the individual of thus flushing the intestine is often marvelous, the pulse improves, for the source of infection is removed, and convalescence may be established.

3. If the situation is like the following there, must be taken into account another factor. A boy, operated upon for acute appendicitis. Drainage is employed. Recovery. Four weeks subsequently acute intestinal obstruction occurs. Operation finds a loop of gut, a foot and a half long, constricted but evidently viable. There are no gross evidences of peritonitis. The bowel is freed, cleansed and replaced within the abdomen. All is aseptically done.

Four days later, because of a persistence o symptoms, the abdomen is reopened, septi peritonitis is found and subsequently deat occurs. The factor to be regarded is the permeability of the intestinal wall.

An appreciation of the changes taking place i the wall of the gut would have precluded thi accidental infection. The bowel might have bee left in the wound or surrounded by gauze or eve resected.

Here was an instance in which the gut wa damaged enough to have demanded resection but it was replaced and the infection occurre through the damaged gut wall.

4. If the gut is evidently dead and there is thrombosis of the mesenteric vessels, resection o the dead gut must be made. More harm come from resecting too little intestine in these case than too much. It does not add to the shock o resection to resect a few inches more. Soun tissue is thus surely reached and the thrombose mesenteric border is avoided. If the individu is too ill to make an immediate intestinal sutur after emptying the proximal gut thoroughly an flushing it out if wise, the two divided end should be attached to glass tubes and draw outside the abdominal incision or well into it aft having caught together the mesenteric borders the gut.

At an *early* date, four or five days later, whe the patient has partly recovered from the initi shock, an anastomosis should be done. I ha done several early anastomoses after first draining the bowel and they have done well. The abdominal wound and the intestine should be so left that the conditions will be most simple for the subsequent operative work of anastomosis with the least shock.

The amount of bowel which may be resected without harm to the individual is of interest in this connection. Senn, in 1892, concluded from experiments that resection of over one third of the small intestine in dogs and cats led sooner or later to marasmus. Trzebicky concluded that not over one half could safely be resected. Monari concluded from his dog experiments that probably not over one half of the human intestine could be resected with safety. Storp concludes from a study of surgical cases recorded and from his operative experience that two thirds of the intestine may be resected in man without fatal or deleterious result.

The *method of anastomosis* after resection, whether at the primary operation or at a secondary operation, is deserving of consideration. Hitherto it has been customary for surgeons to unite the small gut by lateral anastomosis after acute intestinal obstruction. I personally see no reason why this surgical custom should be perpetuated in all cases.

The technic of intestinal suture has now been reduced to thread and needle suture, is so exact, rapid and satisfactory, now that almost all rings and buttons have been eliminated (once called adjuvants), that there is no reason left for a lateral anastomosis, which is clumsy and attended by certain well-recognized dangers. I believe that the lack of development in individual technic has been largely responsible for the persistence of the old custom.

Many cases in the series here reported and the records of many isolated instances confirm the truth of this opinion. If, therefore, there is no contra-indication, such as badly edematous gut or greatly distended gut, I believe an end-to-end anastomosis is safer and preferable to a lateral anastomosis of the small intestine.

With regard to the propriety of any one doing abdominal and intestinal surgery, this may be accepted as a truism. No individual should attempt to do this kind of surgery who has not experimented upon the living cat or dog or pig. No sane man will experiment upon a living human individual in intestinal or stomach surgery. Such human experimentation is criminal. Any individual who essays to do abdominal surgery should fit himself to meet the technical emergencies.

Mature judgment in abdominal surgery only comes with experience in human surgery. Technical perfection any tyro can master. The mature judgment *and* the technical perfection make the surgeon.

In certain cases of intestinal obstruction it has been found satisfactory to do a lateral anastomosis to short circuit the obstruction within the abdomen without any other operative procedure; for example in obstruction from irremovable malignant disease.

The true place for enterostomy has yet to be determined in cases of *mechanical* intestinal obstruction. It has been done in many cases. Some have recovered; some have died. It is a question whether enterostomy drains a sufficient extent of bowel to be of real value. Monk's procedure of washing may be preferable in these desperate cases. It should be tried.

Simple enterostomy at the time of operation with immediate closure of the intestinal opening is of little real value. An enterostomy tube left *in situ* drains a comparatively few intestinal loops. The closure of fecal fistulæ resulting from enterostomy is a problem of much interest. Fistulæ of the colon often close spontaneously. Fistulæ of the small bowel rarely close without operative assistance.

Post-operative intestinal obstruction with its 60% mortality may be avoided if there is the minimum amount of handling of the gut, if absolute hemostasis is maintained, if asepsis is secured, if the parts operated upon are replaced so far as is practicable in their normal positions, i.e., the sigmoid carried to the pelvis, the omentum made to cover a drained area, the large bowel rather than small kept in contact with a drain. Never, if avoidable, should the small gut lie next a drain; adhesions of an obstructive character may form.

That temporary paralysis of the intestine occurs after undue handling, exposure to cold air, etc., has been demonstrated. That permanent adhesions may occur we all know. Drainage should be secured without the use of great masses of gauze. Tiny drains are often best, a rubber tube containing a strand of gauze. Gauze covered with rubber tissue is useful. Evisceration should be avoided.

A comfortable working incision should be employed. A small incision invites trauma in handling. The omentum should be replaced beneath the abdominal incision before closing so as to avoid intestinal adhesions.

The possibility of feculent vomiting or regurgitation should be guarded against during operation upon these desperately sick people by lavage of the stomach just previous to or immediately after etherization.

After operation these cases will demand very careful watching. Distention may be met by high, warm, rectal evacuating enemata, the use of calomel and lavage of the stomach. Morphia or codeine will often stop hiccough. Nutrient enemata may be employed if needed. Subpectoral salt solution will relieve thirst.

In conclusion our knowledge of intestinal obstruction is derived from various sources:

From the necropsy table of the anatomist, from the bedside observations of the internist, from animal experimental physiology, from experimental physiological chemistry, from experimental pathology, from the biopsy table of the surgeon.

We are studying to-day living pathology and it is teaching us more than was ever dreamed of. Every internist should plan to *see* where the surgeon finds the lesion and what that lesion proves to be.

The changes occurring in cases of acute intestinal obstruction are found to be dependent upon an interference with the fecal current and an interference with the intestinal vascular current causing damage to the intestinal wall with a resulting general systemic infection or toxemia.

Intestinal obstructions are surgical lesions. The diagnosis should be made early so that operation may be done before irreparable damage has occurred.

Operative procedures are directed to the relief of the local obstruction; to the diminishing shock by ridding the individual of poisonous intestinal contents, the source of infection; to the early re-establishing of the intestinal canal; to the counteracting of the infection received; to the closure of fecal fistulæ; to the closure of herniæ.

I take this occasion to record 121 cases of acute intestinal obstruction from the Massachusetts General Hospital Clinic for the ten years previous to 1908.

(1) Thirty-seven cases of *post-operative intestinal* obstruction were found among these 121 cases.

Eighteen of these occurred *early* after operation, that is, before the abdominal wound had completely healed, or within twenty-eight days after operation. Of these eighteen *early* cases almost all occurred within five or ten days of the original operation. All followed appendectomy with abscess. The causes of the obstruction were: thick, soft adhesions gluing together intestines, firm adhesions constricting the small gut, adhesions holding the mesentery of the small gut somewhat twisted, a band holding the intestine down, a loop of gut held twisted, a band of adherent omentum, a loop of small gut caught and held slightly twisted by an omental loop.

Of these 18 acute post-operative cases, 13 died and 5 recovered. In the 5 acute cases which recovered there was *no* marked systemic *infection* remaining, in contrast to the 13 which died. These cases, too, were operated on early, before any secondary infection was precipitated. In all five instances no grave sepsis was present.

Details of the five recoveries.

The *first* case, four days after operation, obstruction. Intestine drained at operation, ileum constricted by a band high up in the abdomen.

The *second* case, two days after operation, obstruction. The low ileum was constricted by a band.

The *third* case, two days after operation, obstruction. The collapsed bowel was found. Bands were found and divided.

The *fourth* case, nine days after operation, obstruction. Cecum resected with mass of adhesions.

The *fifth* case, two days after operation, obstruction. Soft adhesions. Ileum adherent to the mesentery of adjoining gut.

Nineteen cases of post-operative obstruction occurred *late*, that is, from one month to two and one-half years following operation.

Of these nineteen *late* post-operative obstruction cases, 13 recovered and 6 died.

The primary operation was for appendicitis with abscess and drainage, or ovariotomy, hysterectomy, intussusception, operation upon the stomach, a previous intestinal obstruction, a perforated duodenal ulcer, an intestinal resection.

The cause of the obstruction was in each case a band or adhesion.

It is a significant fact that of the six deaths sepsis was found primarily present, or there was found a twist of the mesentery, that is, indication of interference with the circulation of the gut.

Of these 37 post-operative obstructions due to adhesions and bands, 18 recovered, 19 died, 51% mortality, 49% recoveries.

It is significant of the importance of gross sepsis as contributing to the mortality in these cases that the per cent of mortality in the *early* post-operative cases was 72%, while of the *late* cases it was but 32%. The ileum was the part of the bowel involved in almost all these post-operative cases.

(2) There were 33 cases of intestinal obstruction from bands and adhesions *not post-operative.* Of these there were 15 recoveries and 18 deaths, a mortality of 55%, recovery of 45%.

Almost all the bands and adhesions were situated in the region of the cecum. In most cases the ileum was involved primarily in the obstruction.

The duration of the symptoms of obstruction previous to operation was about as short in the fatal cases as in the cases recovering; the element of time before operation was not apparently a very important one in determining the result in this series. All were operated fairly early.

(3) There were 9 cases of obstruction from a *Meckel's* diverticulum. Two recovered and seven died.

(4) There were 9 cases of *volvulus* and 9 deaths. These were all very sick cases. They died early after operation. Two died on the operating table.

There were 3 cases of volvulus of the sigmoid, 3 of the cecum, 1 of the colon and 2 of the small gut.

The gut was untwisted, or brought out and sutured to the abdominal wound, or resected and drained, or simply drained.

(5) There were 27 cases of intussusception with a total mortality of 52% or 48% recoveries.

(6) There were 2 congenital malformations of the intestine, each died.

(7) There was one case each of stone in the gut, hernia in a peritoneal pouch, hernia into the foramen of Winslow, one mesenteric embolism; all died.

The total mortality in these 121 cases was 60%, a recovery of 40%.

From this list there have been excluded all strangulated herniæ; all obstructions due to tumors, intestinal and extra-intestinal.

Besides these there were 27 cases in which a diagnosis of intestinal obstruction was made which were either not operated upon or were operated upon and nothing was found.

The per cents of recoveries in cases operated upon for ileus[1] by different surgeons whose cases have been recorded are as follows, with year of publication:

Oblanski,	1894,	110	operations,	38	recoveries,	or 35%
Heidenhain,	1897,	30	,,	14	,,	,, 45%
Kocher,	1899,	78	,,	56	,,	,, 72%
v. Bergmann,	1900,	66	,,	15	,,	,, 23%
v. Mikulicz,	1900,	70	,,	34	,,	,, 49%
Prutz,	1900,	36	,,	19	,,	,, 53%

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[1] These figures have little significance. The individual cases forming each group should be known in order to make valuable such figures.

Zeidler,	1900,	17	operations,	8	recoveries,	or	47%
Hefner,	1902,	31	,,	15	,,	,,	49%
Philipowicz,	1903,	67	,,	25	,,	,,	37%
Ranzi,	1904,	37	,,	15	,,	,,	42%
W. Braun,	1904,	29	,,	17	,,	,,	59%
O. Simon,	1905,	51	,,	21	,,	,,	41%
Gobell,	1906,	54	,,	26	,,	,,	48%
Rubritius,	1906,	91	,,	48	,,	,,	53%
Mass. G. H.,	1908,	121	,,	48	,,	,,	40%

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THE DESIRABILITY OF INSTRUCTION IN PSYCHOPATHOLOGY IN OUR MEDICAL SCHOOLS AND ITS INTRODUCTION AT TUFTS.

BY MORTON PRINCE, M.D.,

Professor of Diseases of the Nervous System, Tufts College Medical School.

Not so many years ago the Harvard bacteriological laboratory consisted of a little oven up in a corner of the gallery of the physiological laboratory in the old medical school. There Dr. Ernst was allowed to cook his germs and experiment. Dr. Ernst, as I remember it, had urged the introduction of bacteriology in the school and the establishment of a laboratory, but such was the skepticism regarding the value of bacteriology that the best that the faculty could be prevailed upon to provide was this little out-of-the-way corner as a tentative measure. Just previous to this Koch had announced his discovery of the bacillus as the cause of tuberculosis, or, as we had been taught in the school (following the views of Niemeyer), of chronic catarrhal pneumonia.

Still many expert practitioners did not hesitate to express themselves as skeptical of the soundness of Koch's alleged discovery, and bacteriology was taught in none of our medical schools. Though considerable work had been done in Europe in bacteriology, as yet America had not joined the procession.

The position of psychopathology to-day is not so very different from what was at that time the position of bacteriology. During the past twenty years a large amount of experimental work in this field has been done in Europe and America, but as yet the great body of the medical profession has not informed itself, either through mastering the literature or by repetition of the experimental observations, of the results of this work. And yet discoveries of the first importance have been made. A large mass of data opening up the mechanism of the mind and of those psycho-physiological processes which produce disturbances in the functions of the body have been collected. If we have not solved the whole of the problems involved in the pathology of hysteria, neurasthenia, obsessions, psycholeptic attacks, dissociated personality and allied psychoses, we have at least learned some of the fundamental psychological principles underlying them and are able in consequence to apply intelligent therapeutics based on a scientific knowledge of the conditions.

The study of functional diseases is winning the attention of medical practitioners and it is well that this is coming about, seeing that these diseases in one form or another — from temporary disturbance of one or more physiological processes of the viscera to persistent and organized derangements of the nervous system — make up probably the largest percentage of all cases that apply to the general practitioner for relief. From the point of view of numbers it is the functional rather than the organic disease that is of the greatest importance in practice, and the same is true from the point of view of effective therapeutics, as it is in the field of this class of disease that we have most control over disease processes and are able to say that we *cure* the patient. That functional diseases often produce intense suffering is also true and they appeal for this reason to the best services of the physician. Of the functional diseases those commonly classed as the psychoneuroses are particularly common and probably occupy a more prominent place in the practice of the general practitioner than in that of the neurologist, who only holds the court of last resort.

It is somewhat remarkable, then, that the study of the pathology and treatment of functional diseases, and particularly of the psychoneuroses, to which alone I now have reference, should hold such an insignificent place in the curriculum of our schools. Surely a layman, if the facts were laid before him as I have stated them above,— and I think they will receive general acceptance,—would express surprise at the small amount of attention that is given to diseases of this type in modern education, considering their importance and frequency, the amount of suffering entailed and their curability. We medical men know the reason for this neglect, which is to be found in their obscurity, general indefiniteness as subjects of objective study and lack of that material character that appeals to the intellectual interest of the average human being. Until recently, too, we have not had a sufficiently sound basis of knowledge to allow us to form precise conceptions regarding their pathology or symptoms, or a technic that would enable us to make them subjects of systematic investigation. It is partly for this reason, too, I think, that there has grown up the present-day crude and unscientific systems of psychotherapeutics known as Christian Science, Mind Cure, Osteopathy and what not, which should, properly speaking, be looked upon as opprobria upon medical education rather than denounced as public evils.

The advance in our knowledge of the pathology and symptoms of the psychoneuroses has, as a result of recent investigations, reached a point that should enable these diseases to become the subject of systematic instruction. To a large extent at least they are open to experimental observations which, though not so exact as those carried out in physiological experimentation, are sufficiently so to give valuable results. By special methods of technic, — hypnosis, abstraction, hypnodization, psycho-analysis, psychogalvanic and association tests, etc., — and by a careful analysis of the symptoms, a complex symptomatology can be unraveled and a basic syndrome laid bare and traced to a dissociation of or an abnormal association in the mind, or some such well-known pathological state. Thus, what has passed for neurasthenia may often be resolved into an association or habit neurosis; or an obsession like a persistent and dominating fear which has possessed the patient through the best part of his life, having originated in a long-forgotten experience; or a dissociation of personality which has rendered the patient a chaotic fragment of his normal self. An hysteria may be traced to a persistent subconscious idea of which the patient is ignorant; the stigmata to the manifestation of dissociated mental complexes; psycholeptic attacks to subconscious automatisms. An ordinary neurasthenic condition can often be shown to be the physical product of faulty habits of thought, of emotional complexes, of fixed ideas and anxieties, which have been cultivated, cherished and guarded by the unintelligent though educated patient and sometimes by the physician. Perhaps an apparently physical disease like hay fever, asthma or an epileptic attack may be resolved into a purely functional habit neurosis of a distinct and well-recognized pathology. Such experiences I have had time and again. When psychoneuroses are studied from such points of view and by a special technic they become an intellectual game of skill, quite as exciting as the unraveling of a problem of chess or an intricate puzzle.

The present-day enthusiasm for psychotherapeutics is, I fear, to a large extent misdirected and unintelligently applied. Every younger practitioner desires to employ the method and every older one is struggling under the self-satisfying impression that he has always employed it — *intelligently*. In simple cases this last is undoubtedly the case, especially when all that is required is common sense, a knowledge of human nature and the experience of a man of the world. But in complex cases it is far from being the case. The trouble is that many want to practise psychotherapeutics but few wish to acquire a knowledge of psychopathology. To do so is a laborious, time-consuming task. What would we think of a physician, or layman, who wished to treat heart disease, who felt himself an expert in the procedure, but who cared nothing about the physiology of the heart, about the work of the valves and of the musculature, about the disease processes that affect the organ and the secondary effects of heart disease on the other organs of the body? As intelligent therapeutics of the heart is based upon a knowledge of the physiology and pathology of the organ, so intelligent psychotherapeutics must be based on a knowledge of the physiology of the mind and pathology of its diseases.

Common observation has shown that when the mental mechanism becomes dissociated, its processes perverted or when associations which are disadvantageous for the individual become formed, not only are abnormal mental syndromes — like fixed ideas, persistent fatigue, weakness of the will, etc.— established, but the physiological functions of the body are deranged in all sorts of ways, with the result that physical symptoms become a prominent part of the morbid picture. In mild cases mental and physical hygiene, such as has been practiced from time immemorial, is all sufficient to insure a cure. But in the severer cases experience shows that it is necessary to go deeper and, by methods specially adapted to the particular case, to determine the exact pathological process present and then to reintegrate the disorganized mental mechanism, or substitute healthy mental complexes for perverted complexes, or re-educate the mind, etc., as the case may be. Here the technic of what may fairly be called a scientific psychotherapy comes into play; measures based on the exact psychopathic conditions present, instead of the empirical measures which experience, without knowing the Why, has shown, will work successfully in milder types. Because of the latter fact, and because certain distinguished teachers have laid stress in a general way on the moral factor in treatment, it is frequently claimed, even by those holding an honorable place in medicine, that modern psychotherapy is nothing more than what has been the practice of all physicians in all times. Such a claim could not be made by any one who has trained himself by actual experience with investigations in psychopathology. To assert otherwise is to exhibit an entire ignorance of the subject; it is worse than ignorance, it is childish. It is the same as saying that modern aseptic surgery does not differ from the surgery of the pre-Listerian period, because cleanliness has always been a surgical tenet and successful operations have been performed without aseptic precautions. The difference is one of technic; the aseptic technic is based on the principles of bacterial pathology, while previous methods of cleanliness were entirely empirical. So, rational psychotherapy, based on the principles of psychopathology, becomes similarly a matter of rational technic. This does not deny that empirical psychotherapy may often be effective like empirical surgery. On the contrary, the methods of psychotherapy, as taught by Dubois and others, the so-called rest-cure of Weir Mitchell, the isolation treatment of Charcot, as well as the practice of all wise practitioners, testify to the efficacy of moral influences in restoring, in the ordinary run of cases, healthy bodily processes. This is particularly the case when the unhealthy state results from disordered mental habits, autosuggestion, morbid introspection, worry, stress and strain, etc. But these methods are all empirical. Even the widely read work of Dubois shows that his methods are based on little more than the results of clinical experience, while his theories exhibit a woeful lack of training in the physiology of the mind and psychopathology. To mention only two points: No one who is well trained in these subjects would venture to maintain, as does the author, that "persuasion" is in principle different from "suggestion" and, therefore, to deny to the latter that efficacy which is claimed for the former. Nor would such a one deny the efficacy of suggestion (persuasion) in hypnosis if he had had the scientific erudition and experience of clinicians like Forel and was master of his subject.

While empirical methods are sufficient in certain cases, many can only be touched by methods based on the special pathology of the disease. But whether or not empirical methods are efficient, it is the aim and object of scientific medicine to investigate the laws of disease and the principles underlying empirical procedures, to the end that the art of treatment may have a rational foundation.

In advocating the introduction of psychopathology into the curriculum of medical schools I ought to state somewhat specifically the field which is intended to be covered. Without attempting to give a definite program, I would suggest the following as a tentative plan. (The classification is not strictly accurate but will serve the purpose.)

Mental physiology. — Mechanism of memory, including physiological (unconscious) memories (spinal cord and ganglia). Meaning of the unconscious. Formation and conservation of unconscious complexes. Meaning of the subconscious and co-conscious. Integrative action of the nervous system. Habit formation. Emotion. Influence of psychical processes on the functions of the viscera (digestive, vasomotor, secretory, respiratory systems, etc.). Cenesthesia. Hypnosis (theory and phenomena). Suggestion. Idea complexes.

Dissociations of the mind. — Anesthesia. Paralysis. Amnesia. Abstraction. Hypnoidal states. Sleep. Trance states. Fatigue. Subconscious ideas and their activity. Unconscious processes. Abulia.

Syntheses. — Sensory automatisms (visual and auditory hallucinations). Paraesthesiae. Pain. Motor automatisms (spasms, contractures). Recurrent mental states. Obsessions. Impulsions. Fixed ideas. Delusions. Unconscious mental complexes and their influences. Dreams.

Special pathology. — Neurasthenia. Hysteria. Psychasthenia. Hypochondriasis. Phobias. Habit psychoses and neuroses. Mimicry. Psycholeptic attacks. Recurrent sensorimotor attacks. Amnesic states. Dissociated personality. Fugues. Tics.

Methods of examinations besides the ordinary clinical methods. — Psycho-analysis. Abstraction. Hypnoidization. Hypnosis. Automatic writing. Artificial hallucinations. Psychogalvanic tests. Word reaction tests.

Principles of psychotherapeutics based on psychopathology.

It has been decided to introduce such a course in Tufts College Medical School this year. This, I believe, will be the first attempt to give systematic instruction in this subject in a medical school. I regret that it will not be possible to carry out in full even such an incomplete program as I have outlined. This is owing to the lack of psychopathic wards to supply the clinical material. To adequately teach psychopathology, we should have the resources of a hospital at our disposal. Unlike other large cities, there is not a hospital in Boston which provides beds for even a neurological service (if we except the *two* (!) beds at the Massachusetts General Hospital and the Long Island Hospital). The difficulty of teaching psychopathology without the material which only a hospital afford will be appreciated if one imagines what would be the result to medical education if our teachers of internal medicine and surgery were deprived of their hospital services. However, we propose to take the initiative, relying upon such opportunities for clinical material as may offer, and hoping that either the powers which determine the policies of our hospitals or some good philanthropist will soon provide wards or hospitals in the interest of patients and of medical science.

Clinical Department.

CONGENITAL VARICES OF THE RIGHT LEG AND EXTERNAL GENITAL ORGANS.

BY HARRY W. GOODALL, M.D., BOSTON.

The following case is of interest on account of its extreme rarity and the slight inconvenience caused by such a marked varicose condition.

Patient: Russian, twenty years old, laborer. Father, mother, two sisters and three brothers living and well. Father states that at birth the physician in attendance said the right arm was around the head. Instrumental delivery after considerable difficulty. At time of birth the whole right side seemed paralyzed, but the right arm and leg were apparently the same size as the left. This side remained weak and he was unable to walk at the fourth year. At this time, after taking the child to several clinics in Russia and

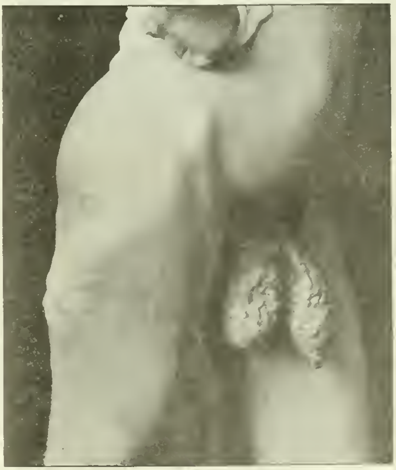

Fig. 1.

Germany, systematic massage was begun and the strength gradually increased, but the right side has never been as strong as the left. He walked with a limp for a long time.

The extensive varicose condition described below was present at birth. The external genitals were very large. The father was told at the various clinics that the condition was so extensive operative treatment was inadvisable. When ten years old began to have pain in the right knee and was unable to walk. He was put to bed with the leg suspended for three months. Since then he has had no serious illness and no particular difficulty with the right side.

The patient came to the Boston Dispensary in July, 1908, complaining of slight pain in the left hypochondrium. This was entirely relieved in five days. The varicose condition was discovered in the course of the routine examination.

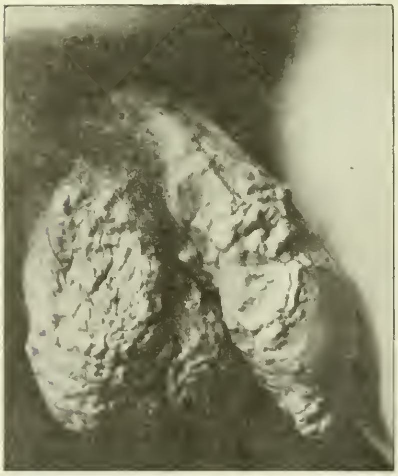

FIG. 2.

His own story is as follows: The external genitals have been as large, the varices as extensive and nearly as pronounced as long as he can remember. There is comparatively little discomfort from the condition. The whole right side is somewhat weaker than the left. Five years ago he worked as a messenger boy, and after walking all day the right side would feel tired. Could ride a bicycle all day without discomfort.

There has been a slight increase in the discomfort during the past two years. If he stands all day or gets very tired the right side drags somewhat and feels heavy. Any change in weather causes the vessels to enlarge considerably, accompanied by a heavy sensation and slight dragging pains. He has never been obliged to wear a suspensory.

Physical examination: Well developed, muscular. Strength of arms and legs practically equal. Heart and lungs negative. Abdomen negative except in the region of the right iliac artery just above Poupart's ligament there appears to be a little more thickening of the tissues than on the left. No hemorrhoids. Rectal examination negative. Urine negative.

There is an extensive varicosity of the superficial veins on the posterior surface of the thigh extending from the lower border of the gluteus maximus half way to the popliteal space, forming a venous tumor seven inches long and five inches wide, shown in outline in Fig. 1. From the lower portion of this mass a large varicose vein extends down the posterior surface of the leg, turning around the external malleolus where it forms a second venous tumor practically covering the dorsum of the foot. A similar condition is present in the superficial veins of the external genitals, but is limited to the right half except at the very tip of the foreskin, where it entirely surrounds it. This condition is illustrated in Fig. 2 There is no varicocele.

The penis with foreskin measures eight inches in length along the dorsum; the circumference just behind the glans is five inches. The scrotum is correspondingly large.

The veins involved are the external saphenous of the leg, branches of the superficial hypogastric and obturator veins supplying the external genitals.

It is apparent that the pathological lesion must be local, as obstruction of a larger vein, such as the femoral, would show a more diffuse enlargement unless there is some anomaly present.

Holmes[1] reports a congenital varix of the genitals, but the case is not nearly as extensive as the one just described.

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ACUTE POLIOMYELITIS FOLLOWING TONSILLITIS.

BY KENDALL EMERSON, M.D., WORCESTER, MASS.,
Orthopedic Surgeon to the Memorial Hospital.

THE following case of acute anterior poliomyelitis occurred so soon after a sharp attack of tonsillitis as to suggest the possibility of a common etiology.

R. K., a strong, healthy boy of eight, attended an all-day picnic on May 30, 1908, getting very tired and later thoroughly wet in a shower. The following day he felt badly and went to bed early with a high fever and sore throat. He was slightly delirious during the night. June 1, his temperature was 104, pulse 120, tonsils swollen and showing bright red spots but no membrane, and cervical glands enlarged and tender. A culture of the throat showed a mixed infection with no diphtheria bacilli present. Further study was unfortunately not made of the culture. The boy showed rather extreme toxic symptoms for an ordinary tonsillitis. Under catharsis and a febrifuge he recovered promptly, however, and the next day was up, showing a normal temperature, practically no sore throat and, save that he tired easily and was cross and irritable, appeared about in his usual health.

June 5, five days after his tonsillitis, he complained in the evening of a curious tingling in his left hand. He slept well and there was no evidence of fever, though he was not seen by a physician.

June 6, he complained again about the tingling in his left hand and forearm and toward evening his head ached. He played hard during the day and there was no evidence of paralysis or weakness in the left arm.

June 7, the left shoulder ached and the headache became severe and extended down into the posterior cervical region. During the afternoon his head became retracted and he appeared feverish. Pain in the left arm was severe and the parents decided he had rheumatism and sent for me. The boy was lying on his right side, very much flushed, pupils widely dilated and showing mental torpor though he could be easily aroused and answered questions readily. There was marked retraction of the neck. This, however, could be overcome without causing any noticeable increase of the cervical pain, which was bitterly complained of by the patient all the time. His appearance and attitude suggested meningitis. No weakness had been noted in the left arm up to this time, and when asked to sit up the boy raised himself by means of both arms apparently equally. His grip was a little weaker on the left. There was also marked diminution of the triceps reflex on that side. The knee jerks were lively, with possibly a slight relative lessening on the left side. Ankle clonus, Kernig's and Babinski were absent. The paralysis at this time was noticeable to a very slight degree only in the left arm. Temperature was 102 and pulse 108 beats to the minute. An ice bag was applied constantly to the back of his neck with great relief within a few hours.

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[1] Tr. Path. Soc., 1864, vol. xv, p. 95.

June 8, the temperature had fallen to 100 and the pulse to 90. Pain through the scapulæ and down the left arm was severe and small doses of morphia were given to relieve it. As far as could be ascertained voluntary movement, though weak and painful, was still present in all muscles of the arm.

June 10, for the first time, paralysis of the deltoid and muscles of the upper arm was complete. Supination was not possible but the flexors and extensors still showed slight power, the latter barely perceptible. The fingers could be fully flexed, the grip, however, being extremely weak. The pulse and temperature were slightly elevated.

June 11, the temperature and pulse were normal and remained so thereafter. Pain was very slight save when the arm was moved or jarred. Paralysis of all the muscles was complete except in the case of the flexors, which had changed little from the previous day.

June 12, the process reached its maximum with no power in any of the muscles of the arm or forearm save extremely weak flexion of the fingers. Pain had largely subsided, but the usual soreness of the muscles persisted for about two weeks.

The knee jerk on the left was slightly weaker than that on the right during the acute attack, and when the patient first walked there was a little staggering but no definite limp. The uncertainty of gait might easily be attributable to general weakness due to the illness. A day or two after getting up he walked perfectly and the knee jerks were equal. Actual paralysis was limited strictly to the muscles of the left arm.

The interesting points in the above case are its direct connection with an acute tonsillitis and the unusual slowness in development of the paralysis. Osler does not mention infectious disease as a possible cause of infantile paralysis. Rotch cites cases following the exanthemata. Tubby and Jones state that the disease occurs occasionally in connection with measles, scarlatina, smallpox and typhoid, but that there is no proved causal relation. They say, however, that the toxic origin of the disease is shown by its occurrence during the summer months when the infectious diarrhea of infants is so common. Wollstein, writing from Flexner's laboratory on the recent epidemic in New York, says, "In but few cases of infantile paralysis recorded had there been any preceding infectious disease." Bradford and Lovett state that "the disease [infantile paralysis] is also known to occur during or soon after measles, scarlet fever, vaccinia, typhus and typhoid fever, pneumonia and erysipelas." In reading on the subject of etiology I did not find tonsillitis mentioned as an apparent causal factor, although it is, of course, in the same category with other infectious diseases.

The interval between recovery from the tonsillitis and the first symptom of the paralysis was short, only three days. But there was no fever during that time and convalescence appeared to be well established. Contrary to advice the boy was allowed to play about actively, and undoubtedly overtired himself in so doing, thereby lowering his bodily resistence to further infection. I do not think that the initial attack was in reality the early stage of the paralytic infection with actual paralysis delayed, as the interval of normal temperature would seem to negative that hypothesis. But it appears reasonable to assume that the tonsils were the atrium of infection for the toxins that later affected the cord.

The second point of interest is the very gradual onset of the paralysis. The first hint of approaching poliomyelitis was the tingling in the left hand on June 5. At this time there was apparently no fever, though the boy was not seen by a physician that day. Loss of triceps reflex and weakness of the arm muscles was apparent two days later. For the ensuing five days the development of the paralysis was progressive with no marked exacerbation until a gradual loss of all power save weak flexion of the fingers had supervened. This is not the classic picture of acute poliomyelitis as given in the textbooks. Paralysis usually develops abruptly and is at its maximum intensity during the early days of the febrile disturbance. Especially is this true during the epidemic form of the disease. Thus Wollstein says of the New York epidemic, "It [the paralysis] usually appeared with considerable suddenness and at its maximum extent from the beginning." Tubby and Jones record three types of onset which they have observed:

(1) A child is taken suddenly ill with febricula, restlessness, pain in head and back, free perspiration and perhaps diarrhea. Paralysis follows in from three to ten days.

(2) A child goes to bed irritable and out of sorts. In the morning paralysis is discovered.

(3) A child is seized suddenly with vomiting or convulsions, which may pass off shortly or continue for days. When the acute symptoms subside paralysis is noted.

In this connection Gossage has suggested the possibility that there may be three or more distinct diseases classed under the common head of infantile paralysis:

"(1) That class where paralysis comes on suddenly without previous ill health.

"(2) That class where the onset of the paralysis is preceded by symptoms such as fever, vomiting, pain in the back.

"(3) The epidemic class in which the disease tends to spread to the brain and distal nerves.

"(4) The adult class."

Medical Progress.

PROGRESS IN DERMATOLOGY.

BY HARVEY P. TOWLE, M.D., BOSTON.

THE SERUM DIAGNOSIS OF SYPHILIS.

(Concluded from No. 15, p. 477.)

Experiments upon apes. — Much valuable information in regard to the reaction was obtained by experiments upon apes which were chiefly carried on in Batavia.[5] The results were confirmed later by clinical experiments upon men. Among other facts these animal experiments demonstrated that apes whose serum was free before infection developed antibodies after infection and that in the lower apes, in whose serum syphilitic antibodies were sometimes present under normal conditions, although in small amount, infection brought about a marked increase in the amount of these antibodies. It was found, however, that the injections of living or dead syphilitic material could cause an increase of the antibodies only up to a certain point. It was also demonstrated that the antibodies disappeared rapidly after the cessation of the injections. Occasionally antibodies were found in the serum before the appearance of the primary lesion. This was considered to be indicative of an early saturation of the organism. In some cases antibodies were found as early as on the seventh day after the infection. Moreover, these experiments upon apes convinced the writers that the serum reaction was specific in syphilis.[8]

Clinical results. — Wassermann estimated[29] that up to December, 1907, his method had been used in over 1,000 cases. The number of investigators who have reported their results is not very large, however. Blaschko[5] reports 270 cases, the larger proportion of which gave positive reactions, whereas all of his non-syphilitic cases were negative. Blumenthal and Wile[6] report 50 cases in which both serum and urine were tested at the same time. Forty-one of these cases were undoubtedly syphilitic. They found the reaction positive in both serum and urine in 41 cases, negative in both in 6 cases and positive in the serum but negative in the urine in 3 cases. Stern,[8] collaborating with Bruck, tested 378 cases of treated and untreated syphilis and obtained a positive reaction in 53%. On the other hand, of 157 non-syphilitic cases, only 2 gave suspicious reactions. Citron[9] found the reaction positive in 74% of his cases of undoubted syphilis, while not one non-syphilitic case reacted. Hoffmann and Blumenthal[13] report a positive result in 80 cases out of 100 in all stages. Meier[18] tested 314 sera, 181 of which were from patients who either gave a history of syphilis or showed the disease clinically at the time of the test. Of the 181 syphilitic sera 81.7% were positive, 2.7% questionable and 15.6% negative. Twenty-one non-syphilitic sera were all negative. Michaelis[19] got 9 positive reactions in 12 cases of undoubted syphilis, mostly late forms, one weak reaction and 2 negative. Of 26 cases without demonstrable syphilis 2 gave positive reactions, 1 weak, 23 negative. He also obtained one positive reaction with normal rabbit serum. A moribund case of typhoid which reacted strongly to the Widal test was also positive to the syphilitic test, but in two other typhoids the reactions were negative. Schutze[24] reports 12 cases of tabes, 8 of which were diagnosed as syphilitic and 4 as non-syphilitic. The 8 syphilitic cases all reacted positively, the 4 non-syphilitic all negatively. The controls were all negative.

Results with normal extracts. — From these results obtained in nearly 1,300 cases it is shown that about 80% of the undoubted syphilitics gave positive reactions to the syphilitic extract (antigen), about 20% a negative reaction and that a positive reaction occurred only exceptionally in non-syphilitic cases. When, however, in the course of extended investigations, non-syphilitic extracts (antigen) were substituted for the syphilitic, it was discovered that they gave results about equal to those obtained with a syphilitic antigen. The claim made by Braun[7] and Weil and Braun[32] that the Wassermann method would give positive results with extracts of normal liver was confirmed by Citron,[9] Landsteiner,[14] Levaditi and Marie[17] and Michaelis.[19] Moreover, Michaelis and Citron both obtained positive results with extracts of the liver of a case dying of carcinoma of other organs. In judging of these results the exceedingly important fact is to be noted that the normal extracts (antigen) gave positive reactions with syphilitic sera (antibodies) only. Weil and Braun,[32] who are strongly opposed to the Wassermann method, admit that "the extract of normal liver gives a reaction only with such fluids as show complement fixation with syphilitic extracts also."[32] Citron[9] states that "the reaction obtained with normal liver extracts showed very marked parallelism with the reaction obtained with syphilitic livers but which, nevertheless, manifested certain small differences which were sufficiently well marked to distinguish it from the syphilitic reaction. I could nearly always predict from its behavior with the normal liver extract which case would react positively to the syphilitic liver." Wassermann now admits the correctness of these results.

Post-mortem results. — Besides these clinical experiments just recorded we have reports from Blaschko, Lesser and Pick of post-mortem experiments with serodiagnosis. Lesser states[16] that for years he has been convinced by his autopsy records that syphilis of the internal organs is rarely recognized clinically. His results with the serodiagnostic method have now confirmed his earlier results. Accepting as correct the current estimates of the prevalence of syphilis in Berlin as 20% of the population, he found that of all patients over twenty-five years old coming to autopsy it was possible to demonstrate in about 9%, or about one half of the syphilitics, some form of late syphilis of the internal organs which also had in most cases not been recognized clinically. As Lesser and Michaelis obtained at autopsy a positive reaction in about 52% of those cases infected several years before and showing no symptoms, Lesser concludes that the serum reaction is positive in about the same proportion of cases as autopsy shows to be syphilitic with absence of clinical signs. Blaschko[5] concludes from the results of over 8,000 autopsies that more than one third of the patients who have had previous syphilis succumb to their present infection. Therefore he considers the agreement which Lesser found existed between the anatomical signs of syphilis and the results of the serum reaction as striking. Pick and Proskauer[21] studied the results with the serum reaction of blood obtained within twenty-four hours after death by aspiration of the right heart or of a large vein. They believe that the results show that the serodiagnosis will render sharper post-mortem diagnoses possible.

Effect of treatment. — A study of the effect of treatment upon the reaction is important because of its relation both to the failure of the reaction in some cases of syphilis and also to the prognosis. Opinions vary considerably as to the influence of treatment upon the reaction. Blaschko[5] found that even Fournier's method of the continuance of treatment for ten years did not prevent a positive reaction in every instance. On the other hand, he observed cases in which the reaction, positive before treatment, became negative after treatment. Bruck[8] obtained only 1 positive reaction from 14 apes previously treated with mercury. Out of 10 apes treated with atoxyl, 9 reactions were negative; of 8 treated with iodine, 5 were negative; of 8 treated with arsenious acid, 4 were negative. Stern[8] believed that treatment exercised great influence, for he found syphilitic antibodies in only 29.5% of the treated cases, compared to 82.3% in the untreated. He concludes that treatment kills or at least weakens the syphilitic virus. Citron[9] seems to believe with Blaschko that while mercury does influence the syphilitic virus so that antibodies are no longer produced, the effect is only temporary, as the antibody curve shows a rise before every relapse. Citron states that the earlier mercurial treatment is instituted, the longer it is continued, the oftener it is repeated and the shorter the time since the last "cure," the smaller the antibody content and the oftener it is nil. Lesser,[16] Meier[18] and Michaelis[19] all agree that mercury will cause the reaction to become negative, while Hoffmann and Blumenthal[13] are doubtful. Meier[18] does not think that the effect of treatment is very lasting as "in cases of less than one year since the last symptoms, and all of which had had energetic treatment during the active period, nearly all showed the presence of antibodies, and the majority in abundance." Lesser agrees with Blaschko that mercury does not prevent the return of the antibodies. While, therefore, Bruck and Stern[8] would accept the amount of antibody present as a guide to the efficiency of the treatment, the majority of the writers will say no more than that a negative reaction after treatment is encouraging.

Value of positive reaction as indication for treatment. — In regard to a positive reaction as an indication for treatment, the only question which can arise as to its value is in connection with old cases which have had no recent symptoms. So long as we remain ignorant of the inner meaning of the reaction this question cannot be answered definitely, and therefore most writers express their opinions very cautiously. To quote Hoffmann and Blumenthal,[13] "Where the reaction is positive in late cases which have previously undergone satisfactory treatment, and which have shown no symptoms for a long time, we should be on the watch for a return of symptoms, but unless clinically demanded we should not necessarily advise a renewal of treatment." Blaschko[5] says that in such cases with a positive reaction we may institute treatment in the hope of making the reaction negative. He continues, "But what then? Shall we keep on repeating the treatment forever?"

Clinical value. — From what has gone before, therefore, we may conclude that the Wassermann reaction is not specific in the strict meaning of the word, and also that its exact value as an indication for treatment cannot be given until the question of the nature of the reaction has been solved. Nevertheless, if we are careful to separate the fact of the reaction from the theory, the results which we have quoted seem to justify the conclusion that the reaction may have a certain clinical value. As stated by Hoffmann and Blumenthal,[13] "However interesting the theory may be, the main question is whether the fact has been sufficiently demonstrated to give it clinical value." The discussion of the subject of the serum reaction at the XIV International Congress represented the prevailing German opinion as follows: "The reaction is not specific for syphilis since in many instances it also gives positive reactions with normal material. On the other hand, its diagnostic usefulness is not destroyed thereby, as, up to date, such reactions have been met with only in connection with syphilitic sera."[35] At a recent meeting of the French Dermatological Society, however, the members were inclined to doubt if the serodiagnosis possessed any clinical value in syphilis.[36]

Prognostic value. — Because of our ignorance in regard to the real nature of the reaction, the prevailing opinion is that, as in all biological tests, a negative result means nothing, while it is by no means proved that in every case a positive reaction means the existence of an active syphilitic process. Wassermann, as has already been mentioned, will merely say that a positive reaction indicates syphilis at some time either past or present.[30] That a positive reaction does not always mean a clinically active process is well illustrated by Citron's case[9] in which the reaction was positive although there had been no clinical symptoms for years, and also by Hoffmann and Blumenthal's case.[13] The latter reported a positive reaction in a man "who had been infected thirteen years before, had undergone a thorough mercurial treatment and had been free from all symptoms for twelve years. Eight years ago he married and his wife and children have remained entirely free from the disease." On the other hand, that the reaction may have some prognostic value is shown by such results as Bruck and Stern[8] report, in which the results of the serodiagnosis were confirmed later by clinical observation.

Development of theory. — A brief review of the development of the theory will show that notwithstanding the fact that even yet certain facts remain obscure, recent discoveries have permitted plausible explanations to be made of many formerly inexplicable occurrences. At first Wassermann [30] believed it most probable that the antigen was a soluble body standing in direct relation with the syphilitic agent (erreger). Weil and Braun [32] then denied the correctness of Wassermann's assertion that his experiments with paralytic sera had demonstrated the presence of specific anti-substances, antibodies related to the syphilitic antigen. By way of reply to this criticism Wassermann, in December, 1907, published an article [29] upon the development and present status of the serodiagnosis in syphilis. He first makes the point that the results obtained by the serodiagnostic method have been confirmed by clinical observations and autopsies, and that where the technic has been properly learned and carried out the results have been uniformly correct. He then goes on to say that disagreement as to the theory does not disprove the fact of the existence of the reaction. "Its nature is another matter. I merely say that it has to do with an antigen possessing some connection with a syphilitic process which is accompanied by the appearance in the syphilitic serum of a substance which we call an antibody or, speaking broadly, a reacting substance. Although I believe the spirocheta pallida to be the cause of syphilis, I will not go so far as to say that we have to do in this reaction with a direct reaction with the spirocheta pallida." [29] "The next step," he continues, "was the discovery, by Porges and Meier, first, that alcohol would give an extract of the syphilitic livers equal in results to the watery extract and, second, that the alcoholic extracts of normal livers would also give positive results." Starting from this point, Porges and Meier suspected that the soluble substance which was carried over into the extracts was a lipoid body. They then demonstrated the fact by obtaining positive results with solutions of the lipoid substance, lecithin. Therefore, Wassermann concludes, "further experiments are needed to show whether we are dealing with substances easily extracted by alcohol or with pure chemical substances like lecithin." This is the framework of the theory which has been strengthened here and there by the conclusions of others. It has already been mentioned that Bruck and Stern [8] were able to demonstrate that injections of syphilitic material (antigen) into apes was followed by an increase of antibodies in the serum. They concluded that while syphilitic antibodies were present in normal serum their increase was the indirect result of the stimulation of the syphilitic antigen. Hoffmann and Blumenthal, [13] and Landsteiner, Müller and Pötzl [14] express practically the same opinion although in slightly different terms. Citron [9] and Marie [17] are inclined to attribute the presence of antibodies in paralytic sera to changes in the cells, thus agreeing in part with Weil and Braun. [32] Michaelis [19] seemed to anticipate events for, after agreeing with the view that it is doubtful if the reaction has anything to do with the syphilitic agent (erreger) or its toxin, he goes on to say that "it is not absolutely proved that there are not two reactions going on together, one with the syphilitic agent, the other with the albumens of the organs," a view in which he is supported by Seligmann.[25]

Progress in theory. — Beneke [4] presents histological evidence to support the opinion that possibly the reaction may be caused by a lipoid substance. He states that he has noted for a long time that the livers of dead born syphilitic children are chiefly composed of large and small fat drops which Loeffler's methylene blue promptly stains deeply. The cause of this staining reaction, according to Beneke, is an otherwise invisible soap membrane which covers the drop. The fact, he says, can readily be confirmed by experiments with an artificial soap emulsion which will show the same reaction. On the other hand, the fat drops of a normal liver do not give this staining reaction to methylene blue but remain unstained. Beneke, therefore, looks upon these facts as evidence of maceration or autolysis, and states that the reaction is related to a similar staining of the fat drops produced by necrosis of the pancreas and which is occasionally encountered in single drops produced by inflammation of the fat tissue. This soap membrane belongs to the lipoid group. "This histological fact shows, moreover, that the liver of the syphilitic new born is rich in soap, which, naturally, must go over into a watery as well as an alcoholic extract. It is very probable, therefore, that this body is the cause of the Wassermann reaction. This fact would not only support Michaelis' guess that there existed in syphilitic livers a substance which was either more abundant than in normal livers or else more easily extracted, but would also explain why an organ which has been kept for some time furnishes a more active extract than a fresh organ." This in turn would add weight to Wassermann's assertion that reliable results can be obtained only by the use of fresh extracts. Sachs and Altmann [23] tested the influence of alkalies and acids upon the behavior of the reaction in order to determine the possible rôle of the lipoid substances. They found, on the one hand, that by adding an excess of alkali to the serum they could destroy the previous positive reaction and, on the other hand, that in several instances sera which previously gave a negative reaction became positive after the addition of hydrochloric acid. They concluded, therefore, that the chemical reaction of the sera was a factor in the presence or absence of the serum reaction. In addition to the theories already given, Bauer [3] advances the theory that the so-called antagonistic substances assist the lipoids to exercise the power of complement deviation.

Conclusions. — If we now sum up the foregoing reports it would seem that the theory which, in the light of our present knowledge, best explains the serum reaction is that it is caused by a lipoid substance; that this lipoid substance is present in greater or smaller amounts in normal serum; that through the syphilitic infection the organism is stimulated to an increased production of antibodies; that the lipoid substances are soluble in water and in alcohol. Finally, we may accept the fact of the reaction. We may conclude that while the Wassermann reaction is not specific, strictly speaking, it nevertheless appears to be clinically specific; that, therefore, in doubtful cases a positive reaction should be given weight in the diagnosis; that, on the other hand, a negative reaction tells us nothing. Much further investigation is needed, however, to tell us "as to the proportion of cases in which the reaction gives us accurate information."[15]

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Reports of Societies.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Thirtieth Annual Congress, held at Montreal, Canada, May 11-13, 1908.

(Continued from No. 15, p. 482.)

SECOND PAPER. THE ETIOLOGY OF PARALYSIS FROM PERIPHERAL CAUSES

was discussed by Dr. D. Bryson Delavan, of New York. He made three general groups of cases: first, those due to trauma; second, those due to mechanical pressure on the nerve, and third, those due to some toxemia either from a poisonous substance taken into the body or from disease. The trauma would include gunshot and incised wounds of the neck, injuries arising from surgical operations and foreign bodies in the larynx or neighboring regions and unsuccessful attempts at removal. Mechanical pressure might be caused by disease of the glands or lymph nodes, tumors, aneurisms, diseases of the heart or pleura and scoliosis. Thyroid enlargement was a very common cause, but the size of this organ seemed to have little effect on or relation to the amount of danger inflicted on the recurrent nerves. Large ones might give no trouble; small ones might cause death. In the author's experience aortic aneurism has been the most frequent cause of left paralysis. From its position with regard to the apex of the right lung the right recurrent may be pressed on under certain pulmonary conditions. Some cases which have been ascribed to pressure in abnormal thoracic conditions may have been due to severe inflammatory states rather than to simple mechanical pressure. By far the most interesting group of cases is the third, viz., that due to toxemias. About these we know but comparatively little. Drugs and infectious diseases may both thus act. There may be a peculiar and distinct vulnerability of the recurrents to toxic effects. Of mineral and vegetable poisons mention was made of lead, arsenic, antimony, copper, iodide of potash, iodoform and perhaps cyanide of potash and phosphorus. Of vegetable poisons, mention was made of alcohol, opium, belladonna, cannabis indica and cocaine. The list of infectious diseases comprised typhoid fever, acute rheumatism, influenza, diphtheria, typhus, pneumonia, puerperal fever, erysipelas, measles, scarlet fever, gonorrhea and serum therapy. Our future knowledge along this line must come from a consideration of and a answer to the following propositions: (1) Is there any truth in the supposition that there is a selective affinity existing in these particular nerves (recurrents) in favor of certain particular drugs through the influence of which the one exercises an inhibitory effect upon the other? (2) Does the drug produce changes in the nerve tissue itself which result in the loss of its activity? (3) Is the lesion a neuritis, induced by pressure or congestion of neighboring parts or by other causes? and (4) Are the effects on the nerve due to central causes, the latter induced by the drug? The "affinity" doctrine seems to be contradicted by the fact that the cases are generally unilateral, not bilateral. The same objection applies to (4). In regard to pressure, it seems probable that this is the mode of action in many instances. The writer was not able to place absolute reliance on the recent statistics of Sendziak, as references were not given and his statements could not be verified nor could the articles from which he derived his material be studied.

SYMPTOMATOLOGY.

The third paper was read by DR. CLARENCE C. RICE, of New York City, on "Symptomatology." The author set forth the clinical phenomena present in paralysis of the several muscles and muscular groups. Taking up first the symptoms, laryngeal and general, of the several temporary disturbances in the efficiency of the laryngeal muscles, not caused by pathological conditions of the nerve centers but by injuries inflicted either on the peripheral nerve filaments or upon the muscular tissue itself, and second, the symptomatology of paralysis of the large adductor or abductor of the vocal cords and of total paralysis of the recurrent nerve, he called attention to the vast amount of literature on this topic, much of it confusing rather than illuminating, and therefore wrote from his own experience. The whole question is complicated by the occurrence of spasm in various muscles so that the detection of paralysis from spasm of opposing muscles is often difficult. The form of paralysis most frequently observed by the laryngologist is that in which all the muscles supplied by the recurrent nerve are affected. The band or bands are in the cadaveric position and respiration is but little affected during rest. In unilateral cases the speaking voice steadily improves and the sound cord is able to go a longer distance, but at first the voice is lower pitched and uncertain. It becomes easily tired and the patient dreads to use it because of breaks in pitch. In bilateral cases there can be no marked dyspnea, but the voice is lost or is very breathy and uncertain, and because of non-approximation of the false cords the pitch in coughing is lowered and husky. The most frequent cause of such cases is intrathoracic pressure or pressure in the upper cervical region. The author also called attention to the difficulty of diagnosis between the forms of paralysis and immobility of one cord by reason of an ankylosed crico-arytenoid joint. As a rule this joint, when affected, shows signs of inflammation, but there may be degenerative changes which do not affect the gross appearances of these cartilages. In unilateral ankylosis the sound arytenoid is only drawn up to and not in front of the disabled one, and also in ankylosis the cord is not in any known paralytic position, neither abduction, adduction or the cadaveric position. Theoretically in non-paralytic conditions the cords are tense, while in paralysis they are limp.

DIAGNOSIS AND TREATMENT.

The final paper in the symposium was read by DR. W. E. CASSELBERRY, of Chicago. He grouped cases under the headings, aneurismal, pleuritic, tumor, central bulbar abductor and central cortical. The author described the typical laryngeal picture under these headings and then discussed some of the variations met with in his own experience or described in literature. In aneurism we find the cord motionless in the cadaveric position, while its arytenoid is collapsed forward, which sinks the cord a little below the plane of its fellow. In phonation the cord may twitch a little but does not straighten. The sound arytenoid may cross a trifle, usually in front of, but possibly behind, the paralyzed one, while the healthy cord comes nearly, but not quite to, the paralyzed one. The collective presence of these features rather than the mere cadaveric position of the cord insures the fact of a complete recurrent nerve paralysis. Occasionally a co-existing swelling of the arytenoid is found which is liable to disguise its paralytic effect and to simulate a crico-arytenoid ankylosis with fixation of the cord. In the 40 cases on which the author's study was based, the left recurrent nerve was paralyzed by an aneurism in 8 and the right nerve in 6. In such cases we should endeavor to control local inflammation, avoid over-use of the voice and give iodides. Of the pleuritic cases 4 were found in the group of 40. All were tuberculous. In all the right cord was affected. The tumor group comprised 8 cases. Sometimes the ventricular band is hypertrophied and almost covers the paralyzed cord. Nature puts forth this compensatory effort in order to endeavor to preserve the voice. Of the 8 cases in this group, voice impairment was a late feature. In very rare instances a "lazy cord" is the first intimation of laryngeal malignancy. The bulbar abductor paralysis group also comprised 8 cases. The mere fact of symmetry in persistent abductor paralysis is indicative of a bulbar lesion. The flaccid cords flap up and down but do not separate. In the unilateral type, and also in the stage of intermittent stridor, we must recognize the possibility of an overpowering spasm of the opposing adductor muscles. A paralytic immobility is liable to lead into a sort of ankylosis of the joints and the author has described a symmetrical ankylosis without much tumefaction under the name of arthritic deformans of the larynx. In this group we should push mercury and the iodides vigorously in the presence of even a remote suspicion of syphilis. In four of the author's cases tracheotomy was ultimately necessary. The cortical group comprised 6 cases. Laryngeal paresis can of course ensue from organic cortical lesions which affect the brain centers of both sides. In none of the author's cases was there any typical image of paralysis. In one, the cord was nearly motionless in the cadaveric position, in two there was incomplete bilateral paresis which predominated on the side on which the arm and leg were also affected. In this sub-group the predominating features were enfeeblement of pharyngeal muscles, impairment of articulation or aphasia. The others of the group were persons in advanced years with cerebral degeneration, the paresis of the cords being the cause only in part of the difficulty in speaking.

The discussion on the subject of the symposium was opened by DR. E. FLETCHER INGALS, who said he had found some difficulty in making a diagnosis of aneurism in this form of paralysis in so far as the x-ray plate was concerned. He had noted invariably on the plates a darkened area just at the left side of the esophagus, due presumably to the large arteries. In two instances he had seen distinctly a small tumor just at the left side. He had thought that these swellings might be small aneurisms, but autopsy in one case had failed to show any such condition. He would like to inquire of those present if they had had any such experience.

DR. G. HUDSON MAKUEN said the interesting point was to determine the exact location of the lesion causing the paralysis. Three possible locations had been suggested in the papers presented: First, in connection with peripheral organs; second, in the medulla, and third, in the cerebral cortex. He was skeptical in regard to the last named, for he did not recall an authentic case of abductor or adductor paralysis due to cortical disease. The fact that stimulation of the cortical centers would cause to and fro movements of the cords did not prove to his mind that a lesion in such center would cause true cord paralysis. It merely meant that stimulation of those cortical segments might incite the bulbar motor centers to action and thus cause the to and fro movements. In over two thousand cases of patients with gross defects of speech he recalled only one paralysis of a bulbar origin, and it was a case of unilateral abductor paralysis.

DR. B. ALEX. RANDALL had had under observation a man with total cord paralysis from a cortical tumor, the removal of which had been successfully accomplished but as yet with only slight return of power in the cord. A more perfect demonstration of a cortical lesion as the cause of the paralysis could hardly be seen.

Dr. H. L. **Swain** had seen three cases with inspiratory dyspnea due to paralysis of the abductor muscles, but in them all a local lesion had been found. In two it was a syphilitic immobilization of the crico-arytenoid joint and in one which eventually came to autopsy it was due to a complete necrosis of the cricoid cartilage.

Dr. J. O. **Roe** referred to a case of laryngeal paralysis due to a fusiform enlargement of the aortic arch. He had seen a number of cases of left side paralysis due to tuberculous deposit at the pulmonary apex.

Dr. C. P. **Grayson** referred to a case under his care during the past winter, that of a man with dyspnea and noisy stridor. Examination by every known method was without result as to the discovery of a cause, but the dyspnea became so great that a tracheotomy was called for. Later it was learned that he had had two or three attacks of peritonsillitis the year previous. Whether such a lesion might be the cause of a peripheral neuritis or not, he could not say. The lesion in the larynx was a double abductor paralysis which might have resulted from a toxic neuritis in connection with the quinsies.

Dr. C. F. **Theisen** said that x-ray plates were often misleading so far as they concerned a definite conclusion as to the cause for compression of the recurrent. In one instance sudden death had resulted from compression, not only of this nerve, but also of the pneumogastric, in a mass of enlarged glands, although the diagnosis of aortic aneurism had been made.

In closing the discussion Dr. **Gleitsmann** wished to point out certain interesting facts: First, it was highly desirable that we should be more definite in our expressions and discussions when referring to laryngeal paralysis. As to the existence of cortical paralysis he would point out that bilateral adductor paralysis in hysteria, emotions, sexual conditions, etc., was of the cortical type. He agreed that the presence of a recurrent or abductor paralysis did not in many cases assist us in diagnosis of the lesion which produced it. Patients might recover from laryngeal paralyses, though this was very uncommon. Of recovery from bilateral recurrent paralysis but one case was known. Here the paralysis had been caused by large pericardial exudates on both recurrent nerves and had disappeared with the absorption of the fluid.

Dr. **Delavan** stated in closing that very few of us realized the varieties of causes which might produce this form of paralysis by pressure. Aneurism was always thought of, but other possible causes were overlooked. The x-ray had proven of very great value, and no obscure case should be dismissed without recourse to it. Cricoid ankylosis was often mistaken for paralysis.

Dr. **Casselberry** believed that the larynx had been neglected of late years and that such discussions as the one now taking place were of the utmost benefit. He was disposed to place high value on the x-ray picture in assisting in the diagnosis of aneurism. When one saw a projection on the plate and a pulsation with the fluoroscope, a diagnosis was reasonably positive. As to diagnosis *intra vitam* of degeneration inside of the medulla, we could only make it by observing similar cases which have ultimately come to post mortem and in which degenerated areas were found in this particular place. He was opposed to intubation in cases of abductor paralysis because he thought it was dangerous to teach the patient to rely upon the tube. If the tube is expelled, the patient might die before it could be re-inserted. Cures reported of laryngeal paralysis might be cures of ankylosis only.

METHODS OF OPENING THE MAXILLARY ANTRUM.

Dr. John O. **Roe**, of Rochester, read a paper with this title and enumerated the various operations which have come into vogue during the last few years. He emphasized the advantages of the nasal route over all others. The success of this latter method, no matter what special modification of it was followed, depended on the freedom of the opening which allows perfect drainage and gives free access to every portion of the cavity. The writer prefers to operate as follows: The lower portion of the turbinate must be removed first, and this may be done with either knife or scissors. An incision is then made through the periosteum down to the bone from behind forward, covering the entire length of the antrum. Over the forward projection of the antrum the first puncture should be made and at this point the incision through the periosteum is turned downward as far as the floor of the nose. This flap is then raised from the bone, carrying periosteum with it throughout this subturbinal portion of the wall and rolled into the center of the nose out of the way. An opening is then made into the anterior portion of the septum as close to the floor as possible. This is enlarged with any instrument preferred, the cavity is carefully explored, curetted and dried out. The periosteum which has been raised from the inner wall is trimmed and then turned down over the stump of the wall and held there by iodoform gauze packing. Hence a uniform mucous surface is left and a perfectly free opening into the cavity. The patient can easily irrigate through such an opening himself and absolutely free drainage is maintained. Danger of recurrence is avoided even in face of infection, and there is no necessity of an external operation. A new model of antral perforator was exhibited.

Dr. Harmon **Smith** described the instrument which he was accustomed to use in perforating the antrum. He did not believe it very practicable to attempt to save the antral mucosa because we often pulled it away entirely in making the first change in the dressing. Dry packing was best.

Dr. W. E. **Casselberry** believed that the best instrument was one which would cut forward after it had entered the antrum.

Dr. J. **Price-Brown**, of Toronto, believed that such an instrument as Dr. Roe had presented was useful in chronic cases, but there was some danger of atrophy resulting if a permanent connection between antrum and nasal fossa was made in young patients. In the latter class the operation by the canine fossa route was preferable.

Dr. Emil **Mayer** was in general strongly in favor of the intranasal route and wished to protest vigorously against the unclean habit of having the patient's mouth bathed with antral pus, as was the case with the buccal route operation. It was possible to cure chronic cases by intranasal drainage, and he had had much satisfaction in using the chisel devised by Dr. Myles, which had a large end and pulled forward, thus meeting the desideratum mentioned by Dr. Casselberry.

Dr. J. H. **Bryan** named as an objectionable feature of the intranasal operation that fact that if the incision was made in the inferior meatus or in the region of the anterior extremity of the inferior turbinal, the opening thus left might prove of great embarrassment to the patient. This operation would not cure all cases, for we could not curette the entire antrum through the inferior meatus. Only through an anterior opening could we remove all the diseased mucosa.

Dr. T. P. **Berens**, of New York, said we must determine whether the antrum is merely a pus reservoir or the actual seat of disease. The discharge may come from above, and our procedure will depend on the finding as to this matter, in each individual case. Dr. Roe had not made it clear to the speaker just how he decided this point in diagnosis and selected his cases for the intranasal operation.

Dr. J. W. Gleitsmann was in accord with Dr. Bryan and said what we needed was a more thorough knowledge of the etiology and diagnosis of these conditions and methods of treatment as simple as possible.

Dr. L. A. Coffin said that his custom was to do a radical frontal or ethmoidal operation on one side and treat the antrum secondarily and do, as had been suggested by Dr. Bryan, the radical operation through the canine fossa opposite the middle turbinate.

Dr. E. Fletcher Ingals spoke of the excessive zeal of some men in the line of operating on sinus cases. One did not need a sledge hammer to drive a tack. He believed that 80% of antral cases and more than that number of frontal cases could be cured by a comparatively mild operation through the nose. It was better to act mildly at first and we still had the radical procedure in reserve.

Dr. J. H. Bryan believed it impossible to cure a chronic antral suppuration without a radical operation. We must get at the various recesses by inspection, and the one most difficult to get at is the anterior orbital angle or the superior maxillary sinus.

Dr. W. L. Ballenger was inclined to coincide with Dr. Ingals. He believed that a large percentage of inflammations, even chronic, of the cells draining anteriorly into the infundibulum could be cured without a radical operation. The ends to be attained were drainage and ventilation and even in the presence of granulation and bare bone cure would result if we could establish the two conditions named. He had found radical operations necessary in only about 3% of a group of 200 cases.

Dr. Berens would admit that 80% of all the cases we saw would recover without radical treatment, but the objection to intranasal surgery in these cases was that we could not always see what we were doing. The dripping of pus into the mouth was not a necessary consequence of the canine fossa operation, for the canine opening could be stitched so as to prevent this.

Dr. Roe said, in closing, that he was accustomed to make a small opening through the nasal wall and then explore with a probe in order to determine whether the antral wall was lined with mucous membrane or whether the cavity was full of granulations and the mucosa spongy. From this opening he inserted a small canula and made further explorations. We can medicate every portion of the antrum by means of remedies applied on a cotton-tipped bent probe. He did not believe in scraping out the antrum and leaving on its surface a great scar. We should give the membrane time to recover.

ABSCESS OF THE LARYNX FOLLOWING PNEUMONIA.

Case report by T. Melville Hardie, of Chicago. His patient was an Italian laborer of forty-three years admitted to hospital with pneumonia. Resolution came in nine days, but he still coughed frequently and had some pain in the throat. Next day there was considerable dyspnea and laryngeal edema could be made out. Two days later tracheotomy under local anesthesia was called for. After exposure of the cricoid and upper trachea an irregular enlargement was made out on the left side of the larynx and incision of it vacuated some pus. Diplococci (probably pneumococci) were found in pure culture. After a serious illness the man recovered. The case is of interest from the unusual etiology of the abscess. The author has been unable to duplicate a record of his experience as far as he has examined the literature of laryngeal abscess. Two interesting features were, first, the extensive edema in the upper larynx and, second, the fact that the damage done to the cartilage was not severe enough to cause an obvious necrosis.

Dr. H. L. Wagner said it was interesting to note the different effects the pneumococcus had on mucous membranes and adjacent structures. In one instance, in a case of pneumonia, an acute swelling was found on the inside of the nose and both sides of the septum and then going externally, giving the picture of erysipelas. From this inflamed area a pure culture was obtained similar to that of the nose and septum.

FURTHER REPORT OF A CASE OF TRACHEAL SCLEROMA.

Dr. Emil Mayer, of New York City, gave the further history of the case reported by him in 1906 (Transactions, 1906, p. 70). Ten months later the patient presented herself with hoarseness and dyspnea and it could be seen that the growth had recurred. She was submitted to x-ray treatment through an extensive tracheotomy wound made for the purpose, the incision being three and one-half inches long from the lower edge of the thyroid cartilage to about three quarters of an inch above the sternal notch. The isthmus of the thyroid was divided between ligatures. Exposure was made under chloroform at first, but without it later. Six weeks of this form of treatment had a most happy result and she left the hospital apparently cured. Seen one year later she reported that she had continued well, without dyspnea, hoarseness or cough, examination of the larynx and trachea showed perfectly normal conditions, with no trace of recurrence. In case of later recurrence the author thinks that application of the x-ray over the cicatrix of the tracheotomy wound would promise good results as this would not present the same resistance as the normal tissue would, or this failing, it would be easy to reopen the former wound and renew the direct exposure.

CASE REPORTS.

Dr. Thomas J. Harris, of New York City, reported two cases. Case 1 was that of a boy of eleven years, with subglottic papilloma which was attached under the surface of the right cord. Attempts at endolaryngeal removal were unsuccessful owing to the extreme irritability of the throat, an overhanging epiglottis and a very poor general condition. He was admitted to hospital and another attempt made with the tube-spatula. In this way a part of the growth only could be taken off and laryngo-fissure was decided on with a preliminary tracheotomy. There was considerable reaction but this finally subsided and it was proposed to insert an intubation tube on account of persistent swelling of the cords, though all traces of the papilloma had disappeared. The child was intubated but in a few hours he began to have severe dyspnea and the tracheotomy tube was introduced. The intubation tube could not be seen in the larynx and events proved that it had been dislodged and swallowed, as it came through in the stools. After a while another intubation tube was introduced and remained in place for a few days and then disappeared, nor was any trace of it found afterward. The boy did well, however, and eventually made a good recovery. The writer would lay stress on the following points: First, the boy's cough, dyspnea and slight fever suggested tuberculosis, but examination of the larynx at once made the diagnosis certain. Second, the advantages of the direct method of removal of these growths.. The writer believes that with a suitable instrument removal would have been possible by direct inspection and the patient saved the subsequent surgical intervention, and, third, the danger of interference with respiration in cases of laryngeal growth during tracheotomy from the sudden inrush of air. Such had been the experience in his case. Fourth, apparent adhesions following the original intervention had apparently cleared up. Fifth, the tumor totally disappeared. Sixth, the loss of the second intubation tube, an accident of possible dire import and, seventh, the surprisingly good voice which resulted.

Case 2 was that of a branchiogenetic cyst occurring in a Russian woman of thirty years who complained of a feeling of discomfort and occlusion in the region of the nasopharynx. Digital examination revealed a growth suggesting a cyst and filled with pulpy material like adenoids. The mass was easily removed with the forceps. Sections showed the tissue to be made up mainly of lymphadenoid structure; one surface showed the normal stratified epithelium of the pharynx. There were a few mucous glands and scattered through the section in several places were tubules lined with ciliated columnar epithelium. Beneath this epithelium the tissue had the appearance of embryonal connective tissue and the growth was evidently the remains of a branchiogenetic cleft.

SOME SURGICAL EMERGENCIES ASSOCIATED WITH THE TUBERCULOUS LARYNX.

This paper by **Dr. Charles P. Crayson**, of Philadelphia, Pa., was a plea for a more hearty and earlier association of the family physician with the specialist in caring for the laryngeal lesions arising in the ordinary course of pulmonary tuberculosis. There should be no such thing as emergency surgery in laryngeal tubercle. That there is, is a confession that the family attendant is remiss in not placing his patient under the care of a specialist so far as the larynx is concerned as soon as this organ becomes implicated, or even earlier. Much can be done to prevent certain complicating lesions, but it must be done by one accustomed to intralaryngeal manipulations. Several personal cases were detailed, illustrating the points made by the writer. In one case a hurried tracheotomy was done to prevent asphyxiation. In a second an abscess was threatening life and called for evacuation. In a third a tracheotomy was called for on account of sudden edema. Such experiences are happening frequently, not only in the country districts, but in the heart of our large cities, where the aid of the laryngologist can be easily secured. For many reasons more or less open to criticism many unfortunate tuberculous patients are allowed to develop laryngeal lesions which, receiving perhaps no better treatment than that afforded by cocaine or orthoform trochees, medicated inhalations of doubtful utility and gargles which are actually harmful, steadily progress to the stage at which pain and dysphagia seriously cripple nutrition, and thus lose their one and only chance of recovery.

Dr. W. E. Casselberry said that it was not always possible to prevent such complications as had been mentioned by Dr. Crayson. They would come on in spite of every precaution the specialist might take.

Dr. J. Price-Brown would emphasize the value of rest in laryngeal tuberculosis. In one instance he had been obliged to do a tracheotomy, but the rest afforded the larynx by the operation had sufficed to keep the patient alive for over five years. One half of the epiglottis was gone and the upper orifice of the larynx was greatly contracted. Yet the man was able to work eight hours a day, and the local process had been brought to a standstill.

Dr. J. O. Roe would regard tracheotomy only as an emergency measure, but functional rest could be obtained by abstinence from conversation. Nothing less than absolute silence was efficient.

Dr. J. W. Gleitsmann called attention to the dangers arising in the use of tuberculin. He had been very careful in selecting the dose, had always had his patient under close observation and had never seen any bad effects. He always examined the chest and eyes after each injection. He believed there was some chance of relieving these cases if the patient could live and work in a hygienic environment with an abundance of good food.

PAPILLOMA OF THE LARYNX IN CHILDREN.

Dr. J. Payson Clark, of Boston, reported the later history of four cases which he had presented to the Association in his paper read three years ago. He also reported four new cases and reviewed the literature of the last three years. The entire number of cases reported was 18. In 10, tracheotomy had been done with 5 fatalities. The author is of the belief, however, that in the prolonged and obstinate cases a preliminary tracheotomy offers a better chance of permanent recovery and avoidance of recurrence than does a laryngo-fissure. Reviewing the literature of the past three years the author can see nothing added to our knowledge of the etiology or pathology of laryngeal papilloma. It has been suggested that adenoids favor the affection. Baumgarten has suggested that a gonorrheal discharge from the mother at birth may be a causal factor. This is, of course, difficult to decide. Bad hygiene undoubtedly favors the development of these growths, for larygeal papilloma is rare among the children of the well-to-do classes. The growth is found more frequently in the anterior half of the larynx. Desiderata of treatment are that we should get rid of the growth as soon as possible and with the least risk to the patient; second, that the voice should not be impaired, and third, that (in girls at least) there should be no external scar. The author dismisses laryngo-fissure as never applicable. When we see a new case we should watch it for a few weeks and if no increase in size takes place we may try removal without tracheotomy, using straight instruments and direct vision. Such growths will not yield to any form of treatment until their period of active growth has been passed or until they have lost their power of reproduction. We have no data by which to estimate the duration of this period. Hence the wisdom of the above-named course of action. In all our manipulations the utmost care must be taken not to wound the mucosa as this trauma may be the site of a new papilloma. The advisability of operating without a previous tracheotomy in cases with dyspnea must be decided in each individual instance. Apart from the curative value of tracheotomy there can be no question that it makes the subsequent removal of the growth easier and safer. The risk of bronchopneumonia following (immediately or eventually) tracheotomy is a real one, but in case of a large and rapidly growing papilloma, or one recurring rapidly after removal without tracheotomy, the only alternative is suffocation.

Dr. A. Coolidge, Jr., coincided in every respect with the views of Dr. Clark. In point of view of treatment, cases of papilloma could be divided roughly into two classes: first, those which occurred in young children, and second, those in children old enough to allow one to put in any instrument for inspection and treatment. This age may be between seven and ten years. Before that age, having once inserted the tube, it should stay in 'till all traces of the papilloma have disappeared. Frequent operating and laryngo-fissure are to be condemned. Papilloma will grow from areas injured in all these manipulations. Children may die from many causes if the tube is removed too early. In all cases in which there is any doubt about our being able to thoroughly remove the growth, the tube should remain until we are absolutely sure we shall not have to reinsert it for an emergency and until we are sure that the mass has stopped growing.

Dr. D. Bryson Delavan referred to the tube devised by Dr. John Rogers, of New York. He was in general accord with the views expressed in the paper and drew special attention to the dangers of ill-fitting tubes.

Dr. Harmon Smith believed that there must be some pathological difference between a single papilloma even when large and the multiple variety. The former are not so apt to recur. The more the latter are removed, the more they seem to recur. If, however, we can put the larynx at rest, the growths may cease to reproduce themselves.

Dr. Emil Mayer asked if any one present had had experience with the local application of alcohol in these cases.

Dr. H. L. Swain had seen some success follow the use of alcohol as suggested. He had had no experience with either iodine or carbolic acid which had been suggested by some writers.

Dr. E. Fletcher Ingals would feel like urging a tracheotomy in all cases in which there is dyspnea before attempting an operation for removal. He had seen no benefit from the use of alcohol but had seen one papilloma cease to recur following the use of iodine and carbolic acid.

Dr. F. E. Hopkins had seen pressure from an intubation tube cause the papilloma to disappear but irritation of the region resulted with ulceration of the vocal cord. A hard rubber tube instead of a metal one might have afforded better results.

Dr. Clark said in closing that in none of his cases was the dyspnea so severe as to prevent him from doing a tracheotomy. He had never been called on to insert an intubation tube to prevent suffocation. Tracheotomies done at leisure left less scar traces than those done hurriedly. He had no experience with the use of alcohol. He did not know as to whether single and multiple papillomata differed in their structure.

ESSENTIALS IN VOICE PRODUCTION.

Prof. Wesley Mills, of the McGill University Medical Faculty, and a guest of the Association, delivered a short address on this subject. In order to influence his patients the laryngologist must show a sympathy with them and some knowledge of musical sound as far as it goes. There are so many methods of vocal teaching now before the public that one is at a loss to know what plan to adopt. Professor Mills laid down as essentials the following points: Speaking and singing are in reality the same. The physiological adjustment of the various parts of the vocal organs is the keynote of the whole question. Practically all respiration exists for the expiratory blast. The principal adjustment is between the expiratory action of the respiratory mechanism and the vocal bands, known as the "attack." This is completed by a further adjustment of the upper or resonance chambers to the parts below. One speaks with the tongue and should on no account speak with the throat. He must speak from the throat into the resonance or upper chambers, that is, he must speak towards his face. He must especially speak and sing with that part of his mouth cavity lying between the soft palate and the teeth. He must keep the back of the throat and the front boundaries of the mouth cavity out of the way. He must never strain or use more force in phonating than the organ can bear without suffering. Artistic speaking and singing are always physiological. Vowels alone are musical and consonants are necessary nuisances but deserving of close attention. The speaker performed some simple experiments illustrating resonance. He deplored the prevailing slipshod methods used in pronunciation in daily life, on the stage and in the concert hall. The present generation is given to a nasal tone owing to the laziness that allows the tongue to roll up and back and the soft palate to drop and meet it so that the breath stream must pass through the nose. Professor Mills would lay great stress on exclusive mouth breathing in phonating. In mouth breathing the tongue flattens and the soft palate tends to rise and the totality of the mouth parts are put into the best form for the utterance of pure vocal sounds. Under such circumstances nasality becomes relatively difficult and in absence of mouth breathing it is very difficult to cure. All faulty methods of voice production tend to produce venous congestion with a corresponding starvation and poisoning of the tissues of the vocal organs owing to the fact that the blood is kept too long in the capillaries.

(To be continued.)

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Book Reviews.

The Student's Handbook of Gynecology. By George Ernest Herman, M.B. (Lond.), F.R.C.P., F.R.C.S., Consulting Obstetric Physician to the London Hospital; Consulting Physician-Accoucheur to the Royal Maternity Charity and to the Tower Hamlets Dispensary; Late President of the Obstetrical Society of London and of the Hunterian Society; formerly Physician to the General Lying-in Hospital and Examiner in Midwifery in the Universities of London, Oxford, Cambridge, Durham and the Victoria University, the Royal College of Physicians and the Royal College of Surgeons. With 170 illustrations. New York: William Wood and Company. 1908.

This small book has most of the merits and also the demerits of the author's larger textbook which was reviewed in these columns some time ago. The handbook is a condensation prepared for the many medical students who are deterred from the use of the large book because of its price or its unwieldiness.

Notwithstanding that, this volume contains many excellent portions founded on the author's wide experience both in the practice of gynecology and in examining students, and although the matter is presented in a clearly written and interesting fashion, on the whole the author's conceptions of the science and art of gynecology are far from being abreast with the best modern ideas; therefore, the book cannot be recommended to our readers.

Diseases of the Nose, Throat and Ear, Medical and Surgical. By William Lincoln Ballenger, M.D., Professor of Otology, Rhinology and Laryngology, College of Physicians and Surgeons, Department of Medicine, University of Illinois, etc. Illustrated with 471 engravings and 16 plates. Philadelphia and New York: Lea & Febiger. 1908.

This is a most important addition to our textbooks on the upper respiratory tract. The methods of diagnosis and treatment, and especially the surgery of this region, have been changing and developing so rapidly during the last few years that the revisions of our older manuals have failed to keep pace with them. This book is new, original and attractive. It has 900 pages, of which about one third are given to the ear. The author defends the increasing tendency to unite the ear with the nose and throat in one book with the plea of the interrelation of the subjects. In this case the result is a volume which is a little clumsy for the student and yet which no one would want to see condensed. As a practical, clinical and, especially, operative guide it is an extended and thorough manual; as an academic textbook it is condensed, clear and generally sufficient. The author is well known from his surgical work, especially in connection with septal deviations, tonsillar dissection and the surgery of the turbinates and speaks with authority on all surgical matters. His instruments and methods of operating are often ingenious, as is also his point of view in certain directions, a good example of which is his description of the neighborhood of the hiatus semilunaris as the "vicious circle of the nose." His surgical ideals he briefly describes "as a plea for rationalism as against radicalism, not for so-called conservation, a term which has been used to justify timidity and surgical inefficiency. The true conservative is a rationalist who dares to refrain from radical procedures and yet who dares to undertake them when indicated."

We have here for the first time in a textbook, among many other things, the total removal of a tonsil with its capsule intact, and a discussion of tonsillar absorption which makes the demand for this operation. The direct inspection of the bronchi and esophagus also here becomes a recognized part of a manual of laryngology. With due credit given to Killian, the modifications of Jackson form the basis of this chapter. The anatomy apart from that having a direct bearing upon operations is brief. We are spared long controversy over etiological theories, although those adopted by the author are sometimes disappointing. A few diseases do not receive the attention to which either their frequent occurrence or their importance entitle them, as an example of which may be mentioned epistaxis and papilloma of the larynx.

The illustrations are original and excellent, none of them superfluous nor intricate. They bring out clearly the points for which they are intended. The book shows evidence of a thorough preparation, careful selection and a judicious omission from the literature of the specialties. It will be welcomed as a textbook by many instructors and as a book of reference by the profession. It will be of assistance to the general surgeon as well as of interest in showing surgical development by specialists trained to see and work in narrow cavities.

THE BOSTON

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ETHER DAY AT THE MASSACHUSETTS GENERAL HOSPITAL.

Twelve years ago, in commemoration of the first use of ether as an anesthetic, the fiftieth anniversary of its discovery was celebrated at the Massachusetts General Hospital. The exercises on that occasion were elaborate and worthy of the significant event commemorated. Invitations were widely sent and, as a result, a most representative gathering of physicians and men of science from this and other countries graced the occasion. From that time on the day has been recognized, but in a comparatively small way. It is now proposed by the trustees of the hospital to institute a more elaborate yearly observance, to which end money has been appropriated and a lectureship founded. This lectureship will provide for an annual discourse by an eminent man on some subject of medical interest, but not necessarily associated with the history or application of ether. In addition to this yearly discourse, which will perhaps be the center of interest of the observance, it is proposed to present their diplomas to graduating house officers and thereby to make of this an event of more importance than heretofore.

This year, on Oct. 16, the anniversary of the discovery of ether, there will be a hospital holiday. From eleven until one on that day clinical and laboratory demonstrations will be given for the benefit of those physicians who may attend the celebration. At one o'clock a luncheon will be given to invited guests, and at half past three the formal portion of the exercises will take place. Prof. William H. Welch, of the Johns Hopkins University, will give the address, which is doubly interesting from the fact that he was also the orator at the fiftieth anniversary twelve years ago. Dr. Henry P. Walcott, chairman of th Board of Trustees of the hospital, will also speak and the exercises will be enlivened by the physicians' chorus, under the leadership of Dr. Richard C. Cabot. This chorus has officiated on various public occasions, among which will be remembered the annual meetings of The Massachusetts Medical Society, the meeting of the American Medical Association held in Boston three years ago and the exercises in dedication of the new Harvard Medical School buildings.

It will generally be regarded as a wise and progressive step on the part of the hospital trustees to dignify Ether Day as they now propose to do. Momentous discoveries in the field of medicine are too infrequent to justify their neglect, and particularly in such a matter as the discovery of ether is it desirable to impress upon coming generations the significance of a discovery which belongs wholly to America and to Massachusetts. We are coming to have in this country a certain number of lectureships founded on such events and it is certainly a tendency to be strongly encouraged. We have no doubt that the step taken this year in regard to the celebration of Ether Day will meet with the heartiest approval of all who have the interests of medical progress at heart and who appreciate the wide-reaching significance which attaches to such public observances.

REPORT OF THE MASSACHUSETTS STATE BOARD OF INSANITY.

The problem of the insane is no doubt one of the most difficult with which the state has to deal. The progress, however, which has been made in the classification of those who through mental defect have become public charges is one of the most gratifying signs of the times. It is evident that persons affected with mental disease are rapidly coming to be placed in the category of the sick, and that public opinion, influenced by the profession, is assuming a more rational attitude toward this unfortunate class in the community. It is not to be questioned that through the admirable work of the Massachusetts State Board of Insanity a grasp of the present situation and of future needs has been secured which will render the solution of the problems in the future far simpler than have been those of the past. It should, however, be understood that the board's relation to institutions and their inmates is essentially advisory and that in this capacity it may exert a very wide influence in promoting uniformity of administration and efficiency. In order that the exact relation of the State Board to institutions may be generally known, we quote the following statement: "It has no direct control over local administrations and internal regulations of institutions. Its direct powers relate to general relations between institutions, the classification and transfer of patients between them, discharge on appeal, investigation as to claims for support in institutions, collections for support if private funds are available for the purpose and deportation out of the state of those who have such claims elsewhere. Family care of the harmless insane is under the control of the board."

The report before us brings the work of the board up to Nov. 30, 1907. It may at first sight appear somewhat discouraging to note the fact that there were under care, Oct. 1, 1907, 10,768 persons in the state adjudged insane, the proportion being one insane person to every 289 of the estimated population of the state. In addition to this number there were nearly 1,500 feeble-minded, nearly 400 epileptics and slightly over 100 inebriates under state care. The increase of all such persons was 478 for the year. Disheartening as such figures may appear, there is considerable food for thought in the fact that the results of mental disease are by no means so serious as popularly supposed. The statistics show that of a large group of discharged patients, 391 had recovered, 276 were capable of self support, 439 were improved and but 313 not improved. In other words, a somewhat more optimistic feeling is justified by statistics, that recovery may take place from mental disease as from other forms of illness and that an attack of insanity by no means precludes the possibility of a useful life. It is certainly desirable, as is admirably done in this report, to publish such statistics and to make accessible to the public facts regarding a much-dreaded and much-misunderstood form of disease. A change is also coming and, we believe, a very salutary one, in estimating at their true worth the causes of mental alienation. For example, in this report the following reasons for the attacks were given: Congenital causes in 5.47%, heredity alone in 5.26% and combined with other causes in 19.39%. Alcohol, directly or indirectly, is regarded as causative of 22%; senility, coarse brain lesions and syphilis are likewise held responsible in 13.79, 5.30 and 3.19% respectively. It is apparent from these figures that a close analysis of possible causes is being made and that the catch word "heredity" is regarded as an adequate cause in itself in only a small proportion of the cases. This is certainly significant of the modern tendency in determining etiology not to permit a term, however sanctified by use, to obscure underlying facts which investigation may reveal. The report as a whole is a public document of great value and should receive a careful reading from a wide circle who are interested in the solution of one of the great modern medical and social problems.

OXYGEN INTOXICATION.

A new fad is reported to be rather rife in London. That somewhat indefinite entity, the "society woman," is going in strongly for oxygen. West End chemists are busy supplying cylinders. The gas is inhaled much as we administer it to the asphyxiated, or to pneumonia patients *in extremis*. Physicians are rightly counseling against this mode of intoxication, especially those of our colleagues whose consultation rooms are in that Olympian region known as Harley Street. They state oxygen to be a powerful and most valuable stimulant for the sick who require it, but, as is true of all stimulants, that excessive and unnecessary use of it is dangerous. Ozone, the concentrated form, is especially advised against as being even more than oxygen a poison, productive of headaches, irritating to mucous membranes, conducive of apoplexy. Like all stimulants, oxygen first excites and then depresses; frequent intoxication by this means will prematurely exhaust the individual's vitality and tend to shorten life. Such indulgence will make the cardiac beats pathologically rapid and strong, the blood to flow with excessive volume, but the chances of reaching threescore and ten, to say nothing of Metchnikoff's century mark, should be very small indeed for those who dissipate in this way. The abnormally conscientious reporter of a London paper himself experienced an "oxygen orgy" solely in order to be able to write up the subject with due vividness. (It is indeed a hard life, that of the present-day lay journalist: the writing of news is by no means the whole of his work, he must also realize the sensations upon which his "story" is to be based.) While still under the influence of fifteen gallons of oxygen this slave to duty wrote: "I feel more inclined to wrestle than to write, not from pugnacity, but from the joy of being alive and possessed of a healthy body to perform the commands of the stimulated brain." His heart made itself "truly obvious; it obtruded; it clamored for recognition, like a good servant who had been ignored; my ears sang and I felt slightly uncomfortable, as if I had hung head downward over a cliff; protesting blood pulsed in my arteries, speech was hesitating, ideas swarmed, but it was hard to seize them."

In this country, also, has undiluted oxygen been employed for other than therapeutic purposes; in athletic contests, for example. Some swimmers at Huntington Bay, Long Island, having been "doped" by the inhalation of this gas, are said to have broken the world's record in this sport. The administrations were by Dr. E. E. Smith, of Fordham University, and Dr. J. G. Bisland, of Huntington, under such conditions as very likely precluded the possibility of any great harm. It is questioned if the surpassing records of these swimmers should stand. They should not. For they were not tests of physical brawn and endurance under normal conditions, those in which human life must ordinarily be lived. Athletics are only legitimate (and the true sportsman at once agrees with this) when the contestant depends for success upon no other factors than his better physique and superior skill. Oxygen stimulation would possibly make an untrained, undeveloped, short-winded, soft-muscled specimen successful for the brief span of a given contest, but for all that he would be the poorer and not the better man. Some years ago a bicyclist "made" a mile in less that a minute behind a railway train going at that rate; a smooth board course had been laid between the tracks, and this was well enough. But a shed had been built out from the rear end of the last car, within which the rider kept. He was thus protected from winds, especially head winds, and was assisted by the suction exerted by the fast-moving train. Genuine sportsmen rightly held his record to be valueless, for it was achieved under unnatural conditions, not under such as must be chanced and coped with in nature.

All this is of very broad application. One lives most advantageously, most wholesomely and with the best results only in conformity with natural laws and with due regard to one's environment. The safest and the only good and right form of oxygen inhalation for normal creatures is in combination with nitrogen as it exists in the atmosphere, for this is the form to which during ages human beings have become adapted. Some astute deductions of the evolutionists are here *à propos*, as: "Whatever amount of power an organism expends in any shape is the correlate and equivalent of a power that was taken in from without." Spencer: "Normal living is the right adjustment of internal relations to external relations."

MEDICAL NOTES.

A Centenarian. — It is reported that Rev. Samuel Armsted, a negro, at one time holding a position of trust in Louisiana, has died at the age of one hundred and four.

Baseball as a Cause of Heart Disease. — The New York Health Department is credited with attributing an increase of deaths from heart disease to the extraordinary excitement prevailing in that city in connection with the baseball situation.

A Centenarian Bride. It is reported that Mrs. Charlotte Decker, who has recently died near Seneca Falls, N. Y., at the reputed age of one hundred and nine, was married at the age of one hundred and two, which unquestionably gives her pre-eminence as an aged bride.

Smallpox in the Philippines. — According to the latest *Report of the Bureau of Health for the Philippine Islands*, the smallpox situation in Manila and certain provinces has gradually improved. Still now and then a case occurs among those who have neglected vaccination. These occasional cases serve one good purpose, that is, to remind the people of the necessity of being protected. The disease this quarter, as well as the last, and all preceding, was almost entirely confined to the non-vaccinated. Notwithstanding the repeated warnings given through the press and by circulars, many persons, especially Americans, neglected this important duty. It requires the presence of an actual epidemic to awake them from their lethargy. It is then oftentimes too late.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Oct. 13, 1908, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 80, scarlatina 42, typhoid fever 34, measles 20, smallpox 0, tuberculosis 54.

The death-rate of the reported deaths for the week ending Oct. 13, 1908, was 18.96.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Oct. 10, 1908, was 216, against 212 the corresponding week of last year, showing an increase of 4 deaths and making the death-rate for the week 18.22. Of this number 119 were males and 97 were females; 211 were white and 5 colored; 138 were born in the United States, 75 in foreign countries and 3 unknown; 40 were of American parentage, 139 of foreign parentage and 37 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 87 cases and 7 deaths; scarlatina, 44 cases and 1 death; typhoid fever, 24 cases and 1 death; measles, 10 cases and 0 deaths; tuberculosis, 41 cases and 17 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 18, whooping cough 3, heart disease 19, bronchitis 3 and marasmus 10. There were 20 deaths from violent causes. The number of children who died under one year was 46; the number under five years 71. The number of persons who died over sixty years of age was 58. The deaths in public institutions were 84.

Cerebrospinal meningitis, 2 cases.

Opening of East Boston Relief Station. — The trustees of the Boston City Hospital have issued invitations to inspect the new East Boston Relief Station connected with that institution, situated on 14 Porter Street, on Thursday, Oct. 15.

Beds for Consumptives. — The accommodations for consumptive patients in Boston have recently been increased by thirty beds. It is expected that a hundred additional beds will be provided during the coming year.

Verdict against a Factory Owner. — Chief Justice Bolster, of the Municipal Court of Boston, has recently imposed a fine of $25 on two counts against Joseph Leventhal, whose factory on Hanover Street was not sufficiently clean to meet the requirements of the present law. It also contained no receptacles for sputum. The ruling is of importance as indicating the tendency of the courts to uphold the Board of Health in its efforts towards improving hygienic conditions.

Appointments as Medical Examiners. — The following nominations have been made by the governor of Massachusetts: Dr. Herbert G. Priest, of Groton, associate medical examiner of the Tenth Middlesex District in place of Dr. William N. Cowles, who has been appoined medical examiner; Dr. Ernest L. Hunt, of Worcester, associate medical examiner of the Eleventh Worcester County District in place of Dr. Walter P. Clark, deceased. Both Dr. Priest and Dr. Hunt are graduates of the Harvard Medical School.

John C. Haynes Memorial Buildings. — The John C. Haynes buildings for the treatment of infectious diseases (scarlet fever and diphtheria) were open to invited guests Oct. 14 and 15 by invitation of the trustees of the Homeopathic

Hospital. The trustees have voted that any physician in good standing may, with the permission of the superintendent, treat his private patients there, provided such patients pay to the hospital the full rate per week of $15 or upwards, according to the accommodations.

NEW YORK.

Bequest to Hebrew Charities. — By the will of the late Miss Eleanor Hendricks, of New York, the sum of $1,000 is left to each of four Hebrew charities, including the Mount Sinai Hospital and the Montefiore Home and Hospital for Chronic Invalids.

Bequest to United Hebrew Charities.— By the will of the late Theophilus M. Marc, of East Orange, N. J., in which bequests to relatives and others aggregate $150,000, the residue of his estate, amounting to about $200,000, is left to the United Hebrew Charities of the City of New York.

Bequests. — Among numerous public bequests in the will of Mrs. Emma A. Tillotson, widow of Luther G. Tillotson, of New York, are $5,000 each to St. Luke's Hospital, the New York Skin and Cancer Hospital, the Woman's Hospital, the New York Society for the Relief of the Ruptured and Crippled, the Home for Incurables, the Adult Blind Association and the Home for Old Men and Aged Couples.

By the will of the late Henry Suydam Wilson, of New York, the sum of $10,000 is left to the Presbyterian Hospital.

American Society for Humane Medical Research. — A new society has just been incorporated, which bears the name of the "American Society for Humane Medical Research," and the objects of which are stated to be to conduct clinical and laboratory research in the medical sciences and to maintain chemical, physical, biological and physiological laboratories and a bureau of statistics, with offices in New York City. Among the published list of incorporators, which apparently does not contain the name of any physician, are two daughters of the late Robert G. Ingersoll, and the society is presumably an antivivisection project.

Legacy to Flushing Hospital. — The Flushing Hospital has received $1,000, together with accrued interest, a legacy in the will of Mrs. Mary A. Shaw, which has been in litigation for the past three years. Mrs. Shaw, who was a negro woman who acted as companion to the late Mrs. Anna Ten Eyck, of Flushing, in the Borough of Queens, was given the use of $100,000 for life by Mrs. Ten Eyck, with the privilege of devising the money to such institutions as she might select, and the greater part of the estate was left to the Tuskegee Institute. The will was contested by the relatives of Mrs. Ten Eyck, but has finally been upheld by the courts.

Mortality in September. — The weekly reports of the Health Department show that the mortality during the month of September represented an annual death-rate of 14.74, as against 15.99 in August and 16.53 in September, 1907. Among the diseases in which there was a diminished fatality were the following: The weekly average of deaths from measles declined from 5 in August to 2 in September; the weekly average from whooping-cough, from 6.75 to 4; from epidemic cerebrospinal meningitis, from 6.25 to 5.5; from diarrheal diseases, from 331.25 to 204.75; from diarrheals under five years of age, from 311.5 to 194; from cancer, from 63.25 to 56.2 and from cirrhosis of the liver, from 20.75 to 17.75. Among the diseases which showed an augmented mortality were the following: The weekly average of deaths from typhoid fever increased from 16.25 to 20.75; from diphtheria and croup, from 13 to 23; from pulmonary tuberculosis, from 147.75 to 154.5; from acute bronchitis, from 7 to 10.75; from pneumonia, from 36.25 to 48.75; from apoplexy, congestion and softening of the brain, from 27 to 29.25; from organic heart diseases, from 110.25 to 117.25; and from Bright's disease and acute nephritis, from 72.75 to 92.5.

Gift to the City of a School. — The city of New York has just received the novel offer of an entire school, including buildings valued at nearly $500,000 and a corps of more than thirty specially trained and experienced teachers. This is the Institution for Improving the Condition of Deaf-mutes, centrally located on Lexington Avenue, which has long been in successful operation and which is at present controlled by a board of trustees of which Judge Charles M. Hough is president. It has now 225 pupils, most of whom are from New York City, but the buildings will accommodate more than 450 additional ones. The only conditions accompanying the offer are that the city shall continue the institution as a public non-sectarian school for deaf-mutes and shall assume on easy terms a debt of $60,000, insignificant in comparison with the value of the property. The controller of the city and Dr. Maxwell, superintendent of the public schools, are in favor of accepting the proposal, and it is expected that the Board of Education will act favorably on the matter some time during the present month. The board, convinced that something should be done for the hundreds of deaf-mute children in New York who were growing up illiterate and as dependents, opened in September, as was recently noted, the first public school of the kind in America. There are at present 90 pupils in attendance, and while the force of instructors now employed is sufficient for that number, it has been found almost impossible to secure competent teachers for the much larger number looked for in the near future. In addition, the old schoolhouse occupied for the purpose is not very commodious, while the Institute's buildings, which are for the most part fireproof, are five stories in height, with a frontage of 200 feet on Lexington Avenue and from 125 to 150 feet on 66th Street.

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Current Literature.

Medical Record.

Aug. 22, 1908.

1. von Leyden, and Lewin, C. *The Appearance of Heteroplastic Tumors in the Transplantation of the New Growths in Animals.*
2. Casselberry, W. E. *Recurrent and Abductor Paralyses of the Larynx: Diagnosis and Treatment.*
3. Cruikshank, G. R. *Medical Treatment of Appendicitis.*
4. Wakefield, H. *The Physiology and Pathology of the Emotions: the Physical Bases of Mental Etiology.*
5. Cumston, C. G. *Marriage from a Medical Viewpoint.*
6. Talmey, B. S. *Notes on Sterility in Women.*

Aug. 29, 1908.

1. Perry, J. C. *Plague: Mode of Dissemination and Methods for Control.*
2. *Einhorn, M. *A Simplification of the Jacoby-Sohms Ricin Method for Pepsin Determination.*
3. Pogue, G. R. *Tuberculosis other than Pulmonary treated with Tuberculin.*
4. Foote, E. M. *Early Diagnosis of Carcinoma of the Sigmoid.*
5. *Bloomfield, M. D. *The Painful Cutaneous Zones in Visceral Disease.*
6. Delatour, H. B. *Four Cases of Perforating Ulcers of the Alimentary Canal.*

2. Einhorn describes a simplification of the Jacoby-Sohms method for determination of pepsin. With the apparatus which he has devised the test may be made in half an hour instead of three hours as formerly.

He describes his apparatus carefully and gives references on the subject.

5. Bloomfield asserts that visceral diseases cause pain referred to definite cutaneous areas, distinct for each organ affected, and that tenderness exists over these areas; that these areas correspond to the farthest fibers of certain posterior spinal nerve roots.

By mapping out the tender area it is possible to ascertain from which portion of the spinal cord the affected viscus receives its nerve supply. He describes his method for examination and records eight cases as examples of these hyperesthetic areas, and also tabulates the zones in 93 patients. [W. B. R.]

New York Medical Journal.

Sept. 5, 1908.

1. Tuttle, J. P. *Cancer of the Rectum. A Study of 100 Consecutive Operations for Malignant Growth of the Rectum and Sigmoid.*
2. Hudson-Makuen, G. *The Essentials of Voice Production.*
3. Miller, J. A. *Tuberculin as an Adjunct to the Home Treatment of Pulmonary Tuberculosis.*
4. Mannheimer, G. *The Conjunctival Tuberculin Test.*
5. Oberndorf, C. P. *The Calmette Reaction as a Diagnostic Aid.*
6. Christian, F. L. *The Tuberculo-ophthalmic Reaction.*
7. Dixon, S. G. *Preliminary Report on the Effect of Repeated Injections of Tuberculin on Lymphatic Organs.*

Sept. 12, 1908.

1. Knopf, S. A. *Explanation of Seeming Paradoxes in Modern Phthisiotherapy.*
2. Woodruff, C. E. *The Dangers of Excessive Sunlight in Tuberculosis.*
3. Tuttle, J. P. *Cancer of the Rectum.* (Continued.)
4. Gilbride, J. J. *Jaundice due to Disease of the Biliary and Pancreatic Passages.*
5. Beers, N. T. *A Dermititis due to the Irritating Effect of Metol.*
6. Weinstein, H. *Neurasthenia Ventriculi and Gastroptosis.*

The Journal of the American Medical Association.

Sept. 5, 1908.

1. Schäfer, E. A. *Artificial Respiration in Its Physiologic Aspects.*
2. Robinson, S. *Artificial Intrapulmonary Positive Pressure.*
3. Green, N. W., and Maury, J. W. D. *The Positive Pressure Method of Artificial Respiration with its Experimental Application to the Surgery of the Thoracic Esophagus.*
4. Sauerbruch, E. F. *Present Status of Surgery of the Thorax and the Value of the Sauerbruch Negative Pressure Procedure in the Prevention of Pneumothorax.*
5. Freer, O. T. *Laryngeal Crises and Paresis of the Abductors of the Vocal Cords as Important Early Symptoms of Tabes, with the Report of a Case.*
6. Sollmann, T. *Formaldehyd Derivatives. A Report to the Council on Pharmacy and Chemistry.*
7. Butler, W. J. *Serum Diagnosis of Syphilis.*
8. Fischer, M. H. *The Nature and Cause of Edema.*
9. Frederick, C. C. *The Care of Patients after Abdominal Section; with Special Reference to the Period of Time they should be kept Recumbent.*
10. Bergey, D. H. *Anaphylaxis induced by Bacterial Proteins.*
11. *Schroeder, J. H. *The Alleged Urinary Manifestations in Diseases of the Pancreas.*

11. Schroeder discusses the so-called pancreatic reaction of Cammidge in the urine, which consists of the formation of characteristic ozazone crystals. Cammidge contends that a positive reaction is strongly suggestive of inflammatory disease of the pancreas. Schroeder was able to get this reaction in a variety of other conditions and concludes that the reaction is not pathognomonic for disease of the pancreas in the clinical sense. [R. I. L.]

Sept. 12, 1908.

1. Mills, C. K. *The Cerebral Centers for Taste and Smell and the Uncinate Group of Fits.*
2. Beck, C. *The Renal Origin of Vesical Calculi, with Observations on Calcareous Tumors of the Bladder.*
3. Ransohoff, J. *A New and Rapid Method of Perineal Drainage in Suprapubic Prostatectomy.*
4. Marshall, H. W. *The Etiology of Chronic Non-Tuberculous Arthritis.*
5. Williams, F. H. *Early Treatment of Some Superficial Cancers, Especially Epitheliomas, by Pure Radium Bromid rather than Operation or X-Rays.*
6. Smithies, F. *Clinical Aspects of Tumors of the Mediastinum, with Consideration of the Findings in 4 Cases.*
7. Boldt, H. J. *Non-Surgical Treatment of Uterine Displacements.*
8. Ream, F. K. *Nitrous Oxid and Oxygen in Dental and Major Surgery.*

9. *McConnell, G. *The Non-Relationship of Active Cellular Division to the Prognosis of Malignant Disease.*
10. Montgomery, E. E. *The Vaginal, the Vertical-Abdominal and Pfannenstiel Incisions. Three Procedures for Entering the Pelvic and Abdominal Cavities.*

9. McConnell shows by pathological examinations and clinical histories that the clinical course of malignant disease has very little relation if any to the number of actively multiplying cells in a given specimen of neoplasm. The general belief that the progress of a case of malignant disease can be foretold by means of a microscopic examination of a portion of the tumor and the estimation of the number of actively dividing cells is unfounded. [R. I. L.]

Archives of Internal Medicine.

September, 1908.

1. *Darling, S. T. *Histoplasmosis: A Fatal Infectious Disease resembling Kala-Azar among Natives of Tropical America.*
2. *Davis, D. J. *Influenza and Influenzal Pneumonia. Their Etiology and Complications and the Occurrence of Influenza Bacilli in Various Infectious Diseases.*
3. *Hewlett, A. W. *Heart-Block in the Ventricular Walls.*
4. *Taylor, A. E. *The Rôle of Ferment Reversions in Metabolism.*
5. Capps, J. A., and Lewis, D. D. *Blood-Pressure-Lowering Reflexes from Irrigation of the Chest in Empyema.*
6. Olsho, S. L. *A Study of the Volume and Specific Gravity of Organs.*
7. *Frissell, L. F., and Van Ingen, P. *The Ocular Tuberculin Reaction.*
8. Patterson, H. S. *Parasites found in New York City.*
9. Bassoe, P. *Multiple Ependymal Glioma; One Tumor of the Fourth Ventricle, the Other of the Frontal Lobes.*

1. Darling describes three fatal cases of infection with a protozoon, histoplasma capsulatum.

2. Davis reports on a bacteriological study of a number of cases of so-called grip, which occurred in the epidemics of 1905 and 1908 in Chicago.

He believes that in many epidemics of clinical influenza or grip, the influenza bacillus plays little or no part as an etiological organism.

The epidemics appear to be due to a variety of organisms, the pneumococcus, streptococcus pyogenes, streptococcus mucosus and micrococcus catarrhalis being most commonly found in the secretions. He found an organism morphologically and culturally identical with the meningococcus in one case.

Complications following these cases are often serious and usually due to pneumococcus, streptococcus mucosus or streptococcus pyogenes.

The influenza bacillus is often found in so-called influenzal pneumonia, but not in all cases. It cannot be considered the primary cause. An abundant mixed bacterial flora is characteristic of the respiratory secretions in these cases. Influenza bacilli are commonly found in a great variety of infections.

Experiments both on animals and human beings demonstrate that these bacilli possess pathogenic properties. They are often, or at least sometimes, non-virulent, as they occur in the secretions.

As secondary invaders they undoubtedly unfavorably influence other primary infections.

3. Hewlett reports a case where he has apparently demonstrated heart block occurring in the ventricular wall. His tracings show that ventricular contractions may cause waves on the jugular pulse with little or no effect on the apex beat, and that such contractions may be followed immediately by normal contractions without a diastolic period. Also that the right ventricle may begin its contractions distinctly later than the left.

In the case reported these tracings were obtained after the use of strophanthin.

4. Taylor points out the important part that the ferment reversions must play in the body economy on theoretic grounds. He considers the status of the theory of reversion of chemical and physical reactions in pure science and then takes up the specific facts tending to demonstrate that the theory holds good in the concrete sense in biologic material.

He considers at length the facts in physiology, as yet more or less devoid of reasonable explanation, that may be logically classed as instances of such reversions and grouped as such under a comprehensive theoretic interpretation, and finally he contrasts the physiologic with the physical station of equilibrium.

7. Frissell and Van Ingen report on a number of ocular tuberculin reactions. Their results are closely in accord with Wolff-Eisner. They have collected the reports of a number of recent writers and they discuss the theories on the subject. [W. B. R.]

The Lancet.

Sept. 12, 1908.

1. *Cautley, E. *Anomalous Pyrexia in Children.*
2. Sutherland, D. W. *The Differential Diagnosis of Fevers.*
3. *Wallace, J. S. *Observations on the Cause and Prevention of Dental Caries.*
4. Gamgee, A. *Chronic Morphinism and its Treatment.*
5. Newbolt, G. P. *Two Cases of Gallstone Ileus; Operation, Recovery.*
6. Walker, C. E. *The Action of Two Sera upon a Carcinoma occurring in Mice.*
7. Taylor, M. F. *Fatal Toxemia after Administration of Chloroform.*
8. Avery, J. S. *A Case of Acute Cantharides Poisoning.*

1. Cautley gives a paper on anomalous pyrexia in children, discussing briefly, as possible causes of this condition, the teeth, the throat and naso-pharynx, intestinal infections and toxemias, infectious fevers, rheumatism and pyelitis.

Certain nervous excitable children are prone to irregular fevers on slight provocation, and occasionally at the age of puberty there is an unexplained rise in temperature, while the cause of some of these febrile conditions remains quite unexplained.

3. Wallace believes that the chief cause of dental caries is a persistent dietetic error and that it is the duty of the medical practitioner to correct this error in any child in which he finds dental caries. It should also be borne in mind that the filling of teeth does not increase the antopurification of the buccal cavity, at least outside the radius of the filling itself, and that the mouth may be kept continually in a dirty and dangerous state although the teeth are filled regularly every three months.

He discusses briefly the proper diet for children and the treatment of dental caries when it exists. [J. B. H.]

British Medical Journal.

Sept. 12, 1908.

1. Haldane, J. S. *The Relation of Physiology to Physics and Chemistry.*
2. Rankin, G. *A Clinical Lecture on Chorea.*
3. Clarke, J. M. *A Clinical Lecture on Three Cases of Paraplegia due to Acute Anterior Poliomyelitis, Toxic Polyneuritis and Traumatic Myelitis Respectively.*
4. Little, J. F., and Bokenham, T. J. *On Bulbar Paralysis followed by Progressive Muscular Atrophy, Treated by a New Method of Ionic Medication (Static Ionization).*

Section of Electricity

5. Morton, E. R. *The Value of Tele-Radiography in Diagnosis.*
6. *Leonard, C. L. *The Diagnosis of Pulmonary Tuberculosis by Means of the Rontgen Rays.*
7. Jones, H. L. *Interrupted Currents in Medical Practice.*
8. *Holland, C. T. *Use of Bismuth in the Diagnosis of Conditions of the Esophagus and Stomach.*
9. Orton, G. H. *Some Fallacies in the X-Ray Diagnosis of Renal and Ureteral Calculi.*
10. Turner, F. D. *The Hemorenal Index.*
11. Butcher, W. D. *The Therapeutic Action of Radium.*
12. Harris, W. *Diagnosis and Electrical Treatment of Nerve Injuries of the Upper Extremity.*

13. Bruce, W. I. *The Localization of Foreign Bodies by a New Method.*
14. *Hall-Edwards, J. F. *Further Notes on X-Ray Dermatitis and its Prevention.*

Section of Ophthalmology.

15. Swanzey, Sir H. R. *President's Opening Remarks.*
16. Turner, A. L. *The Relation of Disease of the Accessory Nasal Sinuses to Diseases of the Eye.*
17. Fuchs, E. *Glaucoma as a Consequence of Leucoma.*
18. Pollock, I. W. B. *Monocular Diplopia.*
19. Axenfeld. *Serum-Therapy in Relation to Diseases of the Eye.*
20. Herbert, H. *Filtering Cicatrices by Two Methods.*
21. Edridge-Green, F. W. *Color Vision and its Anomalies.*
22. Harman, B. *Glycerine as an Adjuvant to Silver Nitrate.*
23. Maynard, F. P. *Seasonal Prevalence of Acute Glaucoma in India.*
24. Henderson, T. *Anatomical Factors in the Pathogenesis of Glaucoma.*

6. Leonard, in a paper on the diagnosis of pulmonary tuberculosis by means of the x-rays, states as his view that the x-ray in its present state can be used only as an adjunct to the other methods of diagnosis and that in the very early stage of the disease, where there is merely very slight infiltration of one apex, its value is not very great.

The discussion of his paper dwelt upon the significance of the small size of the heart as pathognomonic of this condition and the value of unilateral limitation of the diaphragmatic movement as an early sign of tuberculosis.

8. Holland discusses the use of bismuth in the diagnosis of conditions of the esophagus and stomach. He uses two preparations of bismuth, one a mixture of the carbonate and mucilage as thickly made as possible, and the other a mixture with bread and milk in the proportion of half a pint of bread and milk to one and one-half ounces of the bismuth carbonate. This is mixed to form a thick paste.

He describes the technic of the x-ray examination. He believes that some definite routine should be adopted over a large number of cases with the same kind of meal in the same amount given on an empty stomach. The examination should be made in the standing and in the lying position as quickly as possible, the one after the other. It is usually sufficient to make careful screen drawings on the lead glass in front of the screen and to make tracings from these. A second examination should be made about four hours later in all cases. Gastroptosis, dilatation and hourglass contraction usually give significant x-ray pictures. If there are no marked abnormalities in the shape, position and size of the stomach, it is reasonable to assume that no organic disease is present.

14. Hall-Edwards discusses the question of x-ray dermatitis and its prevention. He describes a number of cases in his experience where this has occurred and the treatment he has used and then goes into the details of the various forms of screens, lead glass, etc., which he employs as a preventive measure. [J. B. H.]

Deutsche Medizinische Wochenschrift. No. 36.
Sept. 3, 1908.

1. Harnack, E. *Bad Conditions in the Manufacture of Medicines, with Especial Reference to Pyrenol.*
2. *Saar. *Treatment of Diphtheria, Scarlet Fever and Angina by Pyocyanase.*
3. Baer, J., and Blum, L. *The Action of Glutaric Acid on Phloridzin Diabetes.*
4. *Menghért, W. *A Rapid and Exact Determination of the End Reaction in Sugar Titration by Means of Fehling's Solution.*
5. *Wieland, E. *Clinical Investigations concerning Early Rachitis.*
6. Herxheimer, G., and Hoffman, K. F. *The Anatomic Effects of the Röntgen Rays on the Testicle.*
7. Hönck, E. *Are there Objective Grounds which can Justify us in Allowing Patients to Get up Early after Operation for Appendicitis in the Afebrile Interval?*
8. Mainzer. *The Westphal Sign (Absence of the Knee Jerk) in Healthy People.*
9. Scheffzek. *The Treatment of Cranial Depression in the Newborn.*
10. Neumann, M. *An Automatic Paquelin Cautery.*

2. Saar describes the technic in using pyocyanase and as a result of his observations on a few cases concludes that pyocyanase works beneficially in throats infected with diphtheria bacilli, streptococci or staphylococci. He also considers that some diphtheria cases get well as rapidly with this treatment as with antitoxin and that the pyocyanase is in no way antagonistic to the antitoxin, so that they both may be used at the same time.

4. For this test of the end reaction in the reduction of Fehling's solution, filter paper is used which has been wet with acetic acid and calcium ferrocyanide solution and then dried. Upon placing a drop of Fehling's solution on this paper from a glass rod, a color ring is formed at the periphery of the drop. As the Fehling's solution is gradually reduced, this color ring gradually disappears, until at the end point of the reaction no color ring is visible. Towards the end of the reaction a color spot is apt to appear in the center of the wet spot on the paper. This is due to some of the reduced copper coming along with the drop of fluid and being deposited on the filter paper. If one waits until the precipitate has settled out of the Fehling's solution before taking up a drop for examination, this central color spot will not appear.

5. Wieland gives a clinical report on about 1,000 infants to show that rachitis is not a disease which is present at birth or occurs in the first weeks of life. The thoracic and epiphyseal signs which simulate rachitis in the newborn are those of other diseases or may be seen in perfectly healthy children. The softening of the skull bones which occurs at birth is different from the craniotabes of rachitis. By following his cases for months he found that some of these softened skulls became normal and never showed signs of rachitis. Others later developed typical rachitis, but in the meantime the craniotabes of birth cleared up and the softening that came with the rachitis appeared in another part of the skull. The position of the rachitic craniotabes (in the occipital bone) he considers as typical. A third class of cases, either from developing rachitis early or from tardiness of the healing of the original craniotabes, developed typical signs of rachitis without at any time in their lives being free from craniotabes. Careful examination, however, showed that the increased craniotabes came in the typical place for rachitis and at the same time that the other rachitic signs appeared. From babies of the same class no higher percentage develop rachitis of those that have craniotabes at birth than of those that do not. The question of the histologic proof of rachitis by a study of the bones of premature or newborn babes is still unsettled [C. F., Jr.]

Münchener Medizinische Wochenschrift. No. 37.
Sept. 15, 1908.

1. Hofmeier, M. *The Prevention of Puerperal Fever.*
2. *v. Hippel, E. *Palliative Trephining in Choked Disk.*
3. Schreiber, L., and Schneider, P. *A Method for the Demonstration of Pigments and their Colorless Antecedent Stages, with Especial Consideration of Eye and Skin Pigment.*
4. v. Wasielewski, T., and Hirschfeld, L. *The Influence of Fulguration on the Viability of Cells.*
5. Köhler, A. *A Frequent, Hitherto Apparently Unrecognized, Disease of Certain Bones in Children.*
6. Comesatti, G. *Contribution to the Knowledge of Pressure-Raising Substances.*
7. *Knauer, A. *Pel's Ocular Crises and Some Rare Disturbances of Sensation in Tabes Dorsalis.*
8. Wette, F. *Two Cases of Dislocation at the Metatarso-Phalangeal Joint.*
9. Freidländer, A. A. *The Treatment of Hay Fever.*
10. Ach, A. *Gastronile. (First Communication.)*
11. Yamada, K. *A Contribution to the Methods of Investigation of Erythrocytic Forms.*
12. Richter, G. *The Moisture Reaction of Dried Gelatine and its Significance for the Preservation of Body Fluid.*
13. Haeberlain, C. *The Technic of Needle Extraction.*
14. Krauss, H. *Health Conditions in German East Africa.*

2. v. Hippel reviews the results of trephining for blindness or disturbance of sight resulting from increased intra-

cranial pressure. In early stages, before the loss of sight is absolute, the outlook is favorable for improvement, and complete recovery of sight has occurred. He has collected 128 cases from the literature. In 61 of these, the sight was improved after the operation. These 61 cases lived from one to five years after the operation. The author remarks that the operation is by no means without danger.

7. Knauer reports a case of tabes dorsalis in a woman thirty-six years old who had lancinating pains in legs, precordia and forehead. The patient next developed severe pains in the right eye with considerable watering and sensitiveness to light, with swelling of the conjunctiva and lids. The pupil was much narrowed. No lessening of the field of vision, nor disturbance of sight. At night the pain was less. This condition lasted three days and then suddenly ceased. Six days later the same condition appeared in the left eye, which lasted five days and disappeared more slowly than the former. The author considers this condition to be an eye crisis, such as was discribed in 1908 by Pel. Three such cases, besides the one now described, have been reported. [R. D.]

BERLINER KLINISCHE WOCHENSCHRIFT. No. 37.
SEPT. 14, 1908.

1. König. *Traumatic Joint Inflammations in their Significance for the Opinion of the Insurance Physician.*
2. *v. Bergmann, and Meyer, K. *The Clinical Significance of the Determination of Antitrypsin in the Blood.*
3. *Posner, O. *The Clinical Applicability of Complement Fixation Method in Typhoid Affections.*
4. Pick, L. *Special Structures in Old Pus-Tubes.*
5. Neumann, H. *Veronal Poisoning and Glycosuria.*
6. Rostorozew, M. J. *Kernig's Sign in Tetanus.* (Concluded.)
7. Beneke, R. *Proposals for the Improvement of the Curriculum of Medical Students.*

2. v. Bergmann and Meyer have investigated the antitrypsin content of blood serum in 120 normal and pathologic cases. In carcinoma 92.7% positive antrypsin reactions were obtained, agreeing very closely with the results of Trebing and Brieger, who found in such cases 91.6% positive. Positive reactions were obtained in 24.2% in cases not carcinoma; Breiger and Trebing's results in these cases showed 23.9%. The method of the authors differed considerably from that of Breiger and Trebing. The value of this reaction in the diagnosis of cancer is more in the negative result than in the positive. A negative reaction, in a case of suspected cancer, speaks strongly against cancer being present. Many cases of wasting disease, in fact almost all connected with marked destruction of albumin, will give the antitrypsin reaction. The authors describe at some length their method, which is simple and complete.

3. Posner has observed the fixation of the complement with sera from typhoid and paratyphoid cases. The results are not so fine nor so sure as those of the agglutination tests, and. owing to the great difficulty of the technic, the former method is of little clinical value. [R. D.]

ARCHIV FÜR KLINISCHE CHIRURGIE. BAND 85.
HEFT. 3.

1. *Guleke, N. *Experimental Necrosis of the Pancreas and the Cause of Death in Acute Disease of the Pancreas.*
2. *Cohn, M. *The Relation between the Clinical Picture and the Bacterial Findings in Acute Appendicitis.*
3. v. Khautz, A., Jr. *The Operative Treatment of Perforated Ulcer of the Stomach.*
4. *Hahn, J. *The Radical Operation for Very Large Herniæ, with the Aid of Systematic Stretching of the Abdominal Wall.*
5. *Frangenheim, P. *Experimental Investigations on the Influence of the Suction Treatment of Localized Inflammatory Areas.*
6. Thiemann, H. *Foreign Bodies in the Upper Portion of the Esophagus; Their Removal by Laying Free but not Opening the Gullet.*
7. *Kempf, F. *The Etiology, Diagnosis and Treatment of Coxa Vara.*
8. Stieda, A. *A Typical Injury to the Lower End of the Femur.*
9. Staffel, F. *Compression Fracture of the Head of the Humerus.*
10. Martini, E. *A New Apparatus for the Treatment of Oblique or Compound Fractures of the Leg.*

1. Guleke finds that injection of various fluids into the vessels or into the excretory ducts of the pancreas causes a disease picture in animals wholly analogous to that of acute hemorrhagic pancreatitis of the human being. The hemorrhages which occur in the gland are of minor importance, the most important feature being the pancreatic necrosis. According to the extent of this the course of the disease is mild or severe. By the destruction of pancreatic cells the secretion of the gland is set free and, spreading to neighboring regions, is absorbed by the blood and lymph vessels. Pancreatic secretion, besides its digestive properties, has also toxic qualities, which, when present in sufficient amount, cause poisoning and death. This is always the result when half the gland is suddenly destroyed. Death in the so-called acute hemorrhagic pancreatitis is, therefore, due to poisoning. It is not known which constituent of the pancreatic secretion is the toxic one, but it is found in both the fresh and necrotic gland, in the secretion itself and in the brand of trypsin manufactured by Grübler. By the injection of increasing doses of this trypsin it is possible to protect the animal from a poisoning which would otherwise be fatal. The fat necrosis is caused by the action of the fat-splitting ferment, while the hemorrhages are the result of some toxin contained in the trypsin. To this latter is also due the unusually severe parenchymatous degeneration of the kidneys. As regards the treatment of acute hemorrhagic pancreatitis in the human subject, Guleke feels that a distinction should be made between the severe and mild forms of the disease. In the severe cases, with extensive necrosis of the gland, so much toxin is absorbed that death is inevitable, in spite of any attempt at drainage of the region about the pancreas or even incision of the gland. In the milder cases, however, such procedures may be of avail. Splitting the capsule and walling off the gland by tampons from the rest of the abdominal cavity will occasionally cure these milder cases. Unfortunately the immunity which it is possible to produce in animals by the use of trypsin is entirely too time consuming a process to be of avail clinically.

2. Cohn finds that there is no variation in the clinical picture of appendicitis which might correspond with different organisms causing the disease. Pure streptococcus cases are comparatively rare. The clinical picture of the disease, when due to the colon bacillus, is very manifold. Cases of diffuse peritonitis due to the colon bacillus should be considered to have an unfavorable prognosis. The prognosis of the diffuse peritonitis due to the streptococcus is more favorable. In all cases in which there was even 1 ccm. of exudate in the abdominal cavity, the writer was able invariably to cultivate bacteria.

4. Very large irreducible herniæ have a very high mortality following radical operation. This is due in the main to the disproportion between the capacity of the abdominal cavity and the size of the intestines. Following the forcible reduction of these intestines, there occurs great impediment of breathing. In view of these facts, Hahn has devised the following routine procedure, preparatory to operation: First, the patient being in bed, a diet, in which fat is absent and one which contains but little meat, is given, together with plenty of fluid. Once or twice a day, an hour after the largest meal, Apenta water is given. This is kept up for approximately a week, with modifications according to the individual case. and is followed by a pause of two or three days. Twenty or thirty pounds' weight should be lost under this treatment. Before operation, the bowels are emptied as thoroughly as possible by the infusion of senna. The most important point in this treatment, however, lies in the stretching of the abdominal wall. This is done by daily attempts at reduction of the hernia by taxis. Between these attempts, which should last for a half hour or so, any gain made is retained by a swathe and specially devised pad. In those cases in which the neck of the sac is too small to allow complete reduction of the hernial contents, Hahn advises an operation, under local anesthesia,. dividing the ring in one spot. By this means sufficient room is gained to complete the reduction. Not until all the contents of the hernia can be reduced and

held reduced inside the abdominal cavity, without causing marked distress in breathing, is the radical operation done. The writer's views on this subject are that no hernia is irreducible if sufficient attention and time is given to its reduction.

5. Frangenheim, experimenting on rabbits in which he had caused abscess formation by injection of streptococci, found that these abscesses in every instance increase in size under the Bier suction treatment. In all instances this treatment was applied to the closed abscess. It is, therefore, evident that localized areas of inflammation should be incised before this form of treatment is used.

7. Kempf states that coxa vara is a disease in which there has occurred a dislocation of the epiphysis on the diaphysis of the femur. This gives the effect of a rolling in of the lower border of the femoral neck. Its only etiology is trauma. The prognosis in cases which are treated late is decidedly unfavorable, since in excessive degrees of this disease, a complete restitution is impossible. Cases which are discharged from treatment too early also retrograde. The treatment should be markedly conservative, should be begun as soon as possible and maintained over a considerable space of time. The diagnosis, especially with the aid of the x-ray, is usually easy. *A priori*, every case of involvement of the hip at the end of the growth period should make one suspicious of traumatic coxa vara. [W. C. Q.]

Miscellany.

DR. DENSLOW'S TREATMENT OF TABES.[1]

The paper on tabes by Dr. LeGrand Denslow before the New York Academy of Medicine continues to excite comment. The public press called attention to it, and, in view of the general interest in the subject expressed, Prof. M. Allen Starr has thought it advisable to come out in a statement in which he says: "Lest too much hope of an elusive kind should be aroused in the many victims of this disease, I wish to make it clear that I made no statement that the patients of whom I have knowledge were 'cured.' All those patients had organic locomotor ataxia, with those signs of the disease familiar to physicians, . . . and all of them still show these signs and also other evidences of the existence of the disease. Hence, none of them is 'cured.' All of them, however, were remarkably improved, rendered more comfortable and enabled to go to work, where formerly incapacitated, and this result I have rarely seen produced by any other form of treatment. I think this improvement is all that Dr. Denslow claimed in his paper for his method of treatment." As Dr. J. W. Weinstein, of the medical department of the Vanderbilt Clinic, in commenting on the criticisms in some of the newspapers upon the skepticism of physicians in regard to the permanent value of the treatment, very truly says, no other man hails any true real discovery in medicine with more ardor and enthusiasm than medical men, whose sole purpose is to fight and mitigate disease; but, notwithstanding all the advancement in the various branches of medicine, no organic lesion has so far ever been restored to normal or regenerated anew. In his own defense Dr. Denslow has made a statement in which he declares that in every one of the cases reported in his paper there were the characteristic Argyll-Robertson pupil and absence of the knee reflexes, while the patients were unable to stand steadily with the eyes closed. Besides this, the walk was affected, from a slight staggering gait to utter helplessness, though in the cases in which the latter condition was present it was of very recent occurrence. In all of the cases, he says, these symptoms, with the exception of the knee signs and of the Argyll-Robertson in the older cases, were either relieved materially or disappeared altogether and all the patients gained in weight (from 4 to 38 pounds) and, where this was necessary, were able to resume their usual occupations. In the majority of instances from one to four years have elapsed since treatment was stopped, without any relapse, and those cases treated early this year are gaining in every way without further treatment. He then goes on to say: "I do not claim to cure the changes in the spinal cord; they are permanent; but where these changes produce a chain of symptoms that make the patients more or less wretched and will ultimately lead to a distressing end, I do claim to relieve them in the great majority of cases, with the probability that they will not recur. The balancing power is recovered, the pupils in several instances where the disease was of recent date again reacted to light. The knee jerks I have never cured. The power to walk in many cases is regained, when the destruction of the spinal cord has not progressed too far. In other words, I claim that (in cases of tabes) even a very small amount of hardening in the cord will produce symptoms out of all proportion to the amount of destruction, but that the symptoms can be relieved and further hardening possibly stopped by the means I have stated; and this whether the ataxia is caused by virulent disease (syphilis) or not. Regarding what has been said as to the susceptibility of these patients to suggestion, I would say, I invariably tell my patients that it is impossible to tell what amount of destruction exists; that they will be relieved of only such symptoms as are produced by the hardened tissues being constantly irritated, keeping the whole nervous system in a state of irritability." In conclusion, Dr. Denslow states that as his paper was read at the New York Academy of Medicine, he is prepared to appear before the Council of that body at any time and submit to their decision after showing his cases.

PUBLIC HEALTH AND CONSERVATION.

Professor Irving Fisher, who in one of his papers before the recent International Tuberculosis Congress in Washington declared that consumption costs the people of the United States more than a billion dollars a year, is preparing an exhaustive report for the National Conservation Commission, which will contain not only these figures, but similar data on the economic loss to the country from all other preventable diseases.

Professor Fisher is a member of the National Conservation Commission and for many years has been carrying on studies along these lines. The Commission received letters from physicians all over the country urging it to consider the bearing of public health on the economic efficiency of the nation in its efforts to ascertain the resources of the country.

The Commission from the beginning has contemplated reports on the economic aspects of several phases of the conservation movement which affect the duration and effectiveness of human life, but Professor Fisher has undertaken to prepare a comprehensive statement of the whole subject of the relations of public health to the general field of conservation and especially as to the waste from preventable diseases and unnecessary deaths.

Dr. Fisher is professor of political economy at Yale University and chairman of the "Committee of One Hundred" of the American Association for the Advancement of Science, which has for a long time been carrying on a propaganda for the increase of national health through the elimination of preventable diseases. This Committee of One Hundred is composed of physicians and men engaged in active sociological work in every part of the country, and the results of their investigations and experience are all available to Dr. Fisher, so that his report ought to be the most thorough-going and complete summary of the situation ever made.

At the Tuberculosis Congress, Professor Fisher declared that 138,000 persons die of consumption every year. The cost of medical attendance and the loss of earnings before death average at least $2,400, he said, while if to this is added the money that might have been earned with health, the total loss in each case is about $8,000. He pointed out, also, that the disease usually attacks young men and women just at the time when they are beginning to earn money and cuts off their earning power for about three years, on an average, before they die.

This subject of the economic value to the country of a general raising of the average health came up in the Governors' Conference at the White House in May. Dr. George M. Kober, in his speech on the "Conservation of Life and Health by Improved Water Supply" at the Conference, presented figures which showed that the decrease in the "vital assets" of the country through typhoid fever in a single year is more than $350,000,000. Typhoid is spread by polluted water largely, so that the death-rate from this disease can be directly reduced by the purification of city drinking water. Dr. Kober quoted statistics to show that the increased value of the water to the city of Albany, where the typhoid fever rate was reduced from 104 in 100,000 to 26 by an efficient filtration plant, amounts to $475,000 a year, of which $350,000 may be considered a real increase to the vital assets of the city. Census Bureau figures show that the average annual death-rate from typhoid in cities with contaminated water supplies was reduced from 69.4 per 100,000 to 19.8 by the substitution of pure supplies.

Dr. Kober cited estimates showing that the average length of human life in the sixteenth century was between eighteen and twenty years, and that at the close of the eighteenth century it was a little more than thirty, while to-day it is between thirty-eight and forty; indeed, the span of life since 1880 has been lengthened about six years.

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THE MASSACHUSETTS MEDICAL SOCIETY.

MEETING OF THE COUNCIL.

A meeting was held at the Medical Library, Boston, on Wednesday, Oct. 7, 1908.

The meeting was called to order at 12 noon, by the President, Dr. Silas D. Presbrey. Sixty-nine councillors were present.

Delegates were appointed to medical societies as follows: Vermont: A. V. Goss, of Taunton; B. P. Croft, of Greenfield. New York: S. B. Woodward, of Worcester; C. A. Allen, of Holyoke.

The Committee on Membership and Finance, to whom was referred the question whether one whose resignation from the Society has been accepted can be reinstated by vote of the Council, reported that the opinion of legal counsel had been obtained, which is, in substance, that the statutes of the Commonwealth relating to the Society are explict, that no person can become a member except upon an examination by the Censors, and this rule would apply to the case of a former member. A purely *pro forma* examination by the Censors would not be sufficient; while the by laws (see by-law 15) require the Censors to employ a uniform plan devised by the supervisors, it is not necessary that this plan should be exactly the same in all classes of cases, and a certain relaxation is now made in the case of those who have been in the successful practice of medicine for a period of years, and especially of those who are already affiliated with the regular medical societies of other states.

In view of this opinion it was recommended by the committee, and the Council voted, to recommend to the Board of Supervisors that in the case of those whose resignation from the Society has been accepted and who apply for reinstatement, the Censors shall satisfy themselves by oral examination that such applicants still possess proper qualifications for membership in the Society.

Dr. Dolan for the Committee on Medical Contract Work reported progress and asked for further time, which was granted.

Dr. T. J. Robinson, of Taunton, was appointed a member of the Committee to Procure Scientific Papers, to fill the vacancy caused by the death of Dr. Charles Harrington.

Dr. G. W. Gay was appointed to fill the vacancy in the Committee on State and National Legislation caused by the resignation of Dr. G. G. Sears.

Dr. F. M. Spaulding was appointed to fill the vacancy in the Committee on Ophthalmia Neonatorum caused by the resignation of Dr. E. T. Easton.

Voted: That the date of the next annual meeting of the Society be changed to June 15 and 16, 1909, that it may not conflict with the meeting of the American Medical Association.

RECORD OF MORTALITY

For the Week ending Saturday, Oct. 3, 1908.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	—	—
Chicago	518	186	Waltham	2	0
Philadelphia	—	—	Pittsfield	7	—
St. Louis	—	—	Gloucester	10	2
Baltimore	160	52	Brookline	7	2
Cleveland	—	—	North Adams	5	1
Buffalo	—	—	Chicopee	5	2
Pittsburg	—	—	Northampton	5	3
Cincinnati	—	—	Medford	0	—
Milwaukee	—	—	Beverly	4	2
Washington	—	—	Leominster	2	1
Providence	—	—	Hyde Park	1	1
Boston	212	75	Melrose	1	0
Worcester	37	10	Newburyport	—	—
Fall River	51	11	Woburn	6	3
Cambridge	34	11	Westfield	—	—
Lowell	42	19	Marlboro	4	2
Lynn	21	8	Revere	2	—
New Bedford	31	16	Attleboro	3	0
Springfield	22	4	Peabody	—	—
Lawrence	29	12	Adams	3	2
Somerville	9	5	Clinton	3	2
Brockton	14	3	Gardner	7	1
Holyoke	11	4	Milford	—	—
Malden	7	—	Watertown	—	—
Chelsea	4	2	Plymouth	—	—
Newton	7	2	Weymouth	5	0
Salem	—	—	Framingham	4	1
Haverhill	10	2	Southbridge	—	—
Fitchburg	5	4	Wakefield	—	—
Everett	8	5	Webster	—	—
Taunton	8	3	Arlington	3	—

LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND OTHER OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED SEPT. 30, 1908.

Gassaway, J. M., surgeon. Granted one day's leave of absence. Sept. 26, 1908.

Mead, F. W., surgeon. Leave for one month, granted Aug. 7, 1908, amended to read twenty-seven days from Aug. 26, 1908.

Mathewson, H. S., passed assistant surgeon. Granted one day's leave of absence. Sept. 26, 1908.

Schereschewsky, J. W., passed assistant surgeon. Directed to proceed to the Bureau upon special temporary duty.

Ebert, H. G., passed assistant surgeon. Relieved from duty at San Francisco and directed to proceed to Manila, P. I. Sept. 25, 1908.

Salmon, T. W., passed assistant surgeon. Directed to proceed to Stapleton, N. Y., upon temporary duty.

Mullan, E. H., assistant surgeon. Relieved from duty at Ellis Island, N. Y., and directed to proceed to Montreal, Canada. Sept. 26, 1908.

Boyd, Frank, acting assistant surgeon. Granted four days' leave of absence from Sept. 22, 1908.

Foster, J. P. C., acting assistant surgeon. Granted ten days' leave of absence from Sept. 23, 1908.

Goldsborough, B. W., acting assistant surgeon. Granted two days' leave of absence from Sept. 29, 1908.

Lyall, R., acting assistant surgeon. Granted an extension of seven days' leave of absence from Sept. 28, 1908, without pay.

Safford, M. V., acting assistant surgeon. Granted four days' leave of absence from Sept. 24, 1908, under paragraph 210, Service Regulations.

Stearns, H. H., acting assistant surgeon. Granted four days' extension of leave of absence from Sept. 14, 1908, on account of sickness.

Troxler, R. F., pharmacist. Assigned to station at Evansville, Ind. Sept. 24, 1908.

Troxler, R. F., pharmacist. Granted seven days' leave of absence from Sept. 28, 1908.

Sterns, C. O., pharmacist. Assigned to station, Hygienic Laboratory, Washington, D. C. Sept. 23, 1908.

Graham, K. H., pharmacist. Directed to proceed to Baltimore, Md., for temporary duty. Sept. 28, 1908.

APPOINTMENT.

Dr. S. A. Ransom appointed an acting assistant surgeon for duty at Shanghai, China. Sept. 25, 1908.

BOARD CONVENED.

Board of medical officers convened to meet at Seattle, Wash., for the purpose of examination of two Chinamen from steamship "Kumeric." Passed assistant surgeon M. W. Glover, chairman; assistant surgeon C. W. Chapin, and acting assistant surgeon F. R. Underwood, recorder.

PHYSIOLOGICAL SEMINAR.

A physiological demonstration, with an informal lecture, will be given by Prof. W. T. Porter at the Harvard Medical School, Room 253, Building C, from five to six o'clock on Monday afternoons throughout the collegiate year. Any physician or undergraduate interested in physiology will be welcome.

APPOINTMENT.

Dr. Henry A. Christian, Hersey Professor of the Theory and Practice of Medicine in the Harvard Medical School, has been appointed Dean of the Faculty of Medicine.

SOCIETY NOTICES.

Boston Society of Examining Physicians and Surgeons. — The Boston Society of Examining Physicians and Surgeons will open the winter season with a meeting and dinner at the Boston City Club on Wednesday, Oct. 21, at 7 p.m. The dinner will be served in the new dining room at the club and the after-dinner speakers will be, Dr. Morton Prince, Professor of Diseases of the Nervous System at Tufts College Medical School (Subject: Psychotherapy); and Dr. Richard C. Cabot, Assistant Professor of Clinical Medicine at Harvard Medical School (Subject: Physical Diagnosis). Applications for dinner tickets ($1.50 each) should be made at once to Dr. Chas. Theo. Cutting, Secretary, 141 Milk St., Boston.

The National Association for the Study of Epilepsy and the Care and Treatment of Epileptics. — The eighth annual meeting of the Association is to be held at Indianapolis, Ind., Tuesday and Wednesday, Nov. 10 and 11, 1908. As this is the first time the meeting of the Association has been held in the West, we are desirous of having a large attendance. "The objects of the Association shall be: 1. To promote the general welfare of sufferers from epilepsy. 2. To stimulate the study of the causes and methods of cure of this disease. 3. To assist the various states in America in establishing a proper system of care for epileptics. 4. To advocate the care of epileptics in institutions designed to meet their special needs."

J. F. Munson, *Secretary-Treasurer,*
Sonyea, N. Y.

Wm. T. Shanahan,
Chairman Executive Committee.

RECENT DEATHS.

James W. Hadlock, M.D., a retired physician, died at his home at Oswego, N. Y., where he had formerly practiced, on Oct. 8, in the seventy-second year of his age. He was graduated from the Cincinnati College of Medicine and Surgery in 1863, and for a number of years practiced in Ohio, where at one time he was prominent in politics.

John Eleazer Parsons, M.D., M.M.S.S., died in Ayer, Oct. 7, 1908, aged seventy-two years. Dr. Parsons was a well-known physician of the town of Ayer and a prominent citizen as well. Born at Harrison, Me., he early came with his parents to Charlestown, near Boston, and, after a preliminary education at the public schools, he received his medical degree at the Harvard Medical School. He served in a medical capacity during the first months of the Civil War and on his retirement, July 30, 1863, he received the commission of assistant surgeon of the 28th Massachusetts Volunteer Infantry.

BOOKS AND PAMPHLETS RECEIVED.

The Long-Waisted Woman and Her Movable Kidney. By A. Ernest Gallant, M.D. Reprint.

Movable Kidney in the Genesis of Bile Duct Disease. By A. Ernest Gallant, M.D. Reprint.

University of California Publications in Physiology. Origin of Two New Retrogressive Varieties by One Mutation in Mice. (Preliminary Notice.) By Arend. L. Hagedoorn.

The Cure of Rupture by Paraffin Injections. By Charles C. Miller, M.D. Chicago: Oak Printing Co. 1908.

Oxford Medical Publications. Selections from the Writings, Medical and Neurological, of Sir William Broadbent, Bart., K. C.V.O., M.D., F.R.C.P., F.R.S., D.Sc. (Leeds), L.L.D. (Edinburgh, St. Andrews and Toronto). Edited by Walter Broadbent, M.D., M.R.C.P. London: Henry Frowde; Hodder & Stoughton. 1908.

Address.

THE ANTI-TUBERCULOSIS PROGRAM: CO-ORDINATION OF PREVENTIVE MEASURES.

Being a Lecture Delivered, on the Invitation of the Committee, before the International Congress on Tuberculosis at Washington, D. C., Sept. 21 to Oct. 12, 1908.

BY R. W. PHILIP, M.A., M.D., F.R.S.E. AND F.R.C.P.E., EDINBURGH.

The anti-tuberculous crusade is a world movement of first importance. Although of recent origin, it has already attained striking proportions. It is a fine expression of the large humanitarian outlook of modern life. This great international congress affords remarkable illustration of the wide interest which has been awakened.

Nevertheless, the movement can hardly yet rank as an effective campaign against tuberculosis save in a few centers. Speaking on American soil, it is my privilege to recognize that nowhere has a more thorough plan of action been instituted than in the city of New York.

BEFORE THE TUBERCLE BACILLUS: SANITARY LEGISLATION.

The work achieved by the nations severally, of which the international congress is the formal register, has been overtaken in chief part during the past ten years. Prior to that, however, much had been accomplished. Before the discovery of the tubercle bacillus a warfare of less direct nature, but still a successful warfare, had been carried on. The methods of that warfare have been maintained in more recent times and must constitute an essential feature in the further movement. The recognition of physiological principles and the institution and enforcement of sanitary measures, with consequent improvement of individual environment, have proved of incalculable service. The legislation of the past three quarters of a century with regard to the dwellings of the poor, lodging-houses, workshops, factories and other public-health enactments have paved the way for the more direct attack. Through the influence of these measures, mortality from tuberculous diseases has as steadily lessened as that from other infective conditions. It is in large part due to the efficacy of such legislation that England has continued for long to yield the lowest death-rate from tuberculosis. The progressive decline in the death-rate during the pre-bacillus period thus finds definite and sufficient explanation.

There can be no doubt that the housing question, using that phrase to include all considerations relating to dwellings, lodging-houses, schools, workshops, factories, offices, etc., must occupy a chief place in the preventive program against tuberculosis.

The attitude of certain countries, notably Italy, France and Spain, towards tuberculosis in still earlier times is of historical interest, and, so far as these countries are concerned, has probably been of permanent value. Let me remind you that, towards the end of the eighteenth century, these countries regarded tuberculosis as a condition to be dealt with by special legislative enactment. For our present purpose it is sufficient to recall that a system of compulsory notification was in vogue, and heavy penalties were attached to breach of the statutes relative to precautionary measures to be taken in tuberculous cases.

ENTER THE TUBERCLE BACILLUS.

In spite of a growing belief among advanced thinkers that tuberculosis was communicable, it took the world by surprise when the announcement was definitely made that the tubercle bacillus was the effective cause. The incontrovertible fact had little immediate effect in relation to treatment. It was difficult for the existing generation to interpret its bearings. A glance through the literature of medicine during succeeding years recalls in striking fashion the tremendous work which was necessary before the bacillus was accepted practically as the cause of consumption and other tuberculous disease. The retrospect reveals an almost endless procession of researches regarding the bacillus, its life history, its toxic influence, its effect on the tissues of its host, the histology of the induced processes, the significance of constitutional symptoms and the cause of death from tuberculosis.

With more exact knowledge, clearer views were possible as to the connection of a previously ill-defined group of diseases. The vagueness of older conceptions was replaced by clearness and unity of view. It became evident that heredity, which had hitherto played so large a part in the conception, meant chiefly greater liability of tissue, to which fell to be added risk of infection by environment.

There was speedily forthcoming from all parts of the world abundant evidence of the universality of the disease and the overwhelming disaster it induced. For the first time the tremendous mortality from tuberculosis seemed to be realized.

ANTI-TUBERCULOSIS EFFORT.

Efforts now began to be made to cope with the evil. Here and there institutions and agencies were founded for the relief of tuberculous patients. Gradually in most countries of the world there sprang up anti-tuberculosis societies. The work of these has increased from year to year, and their influence has been considerable as regards prevention and treatment. They have helped greatly to awaken interest and direct public opinion. The labors of various national societies have been fruitful and far-reaching. In recurring international congresses and conferences, the opinion of representatives from all the nations has been focused, with the result that the movement has advanced more or less consistently throughout the world.

Reviewing the situation at the present moment, our feeling is one of admiration at the progress which has been made. In what may be said subsequently, I trust it will not be supposed that I am belittling the really splendid work which has been accomplished. I have kept myself in close touch with the development of the movement throughout its entire course, and venture to say that no one appreciates more thoroughly the difficulties which had to be met and the excellence of the work.

INSUFFICIENCY OF MOVEMENT.

None the less, it has been my conviction for a number of years that the movement has tended to proceed on less effective lines than it might, that there has occurred an unnecessary dissipation of effort, and that consequently the net result has been less than it should have been. This misdirection and waste of energy seem to me traceable in chief part to insufficient realization of what is required and the lack of efficient organization and co-ordination of measures.

VASTNESS OF THE PROBLEM.

In seeking for a solution of the vast problem, the first desideratum is a just conception of its nature and extent.

We start from the premises (*a*) that tuberculosis is an infective condition; and (*b*) that it is in large part the expression of faulty social conditions.

TUBERCULOSIS AN INFECTIVE CONDITION.

As an infective condition, it must be attacked in accordance with the principles which have been found applicable in the prevention of other specific fevers. These principles apply to tuberculosis no less than to enteric fever.

But the prevention and treatment of tuberculosis present a more complicated problem. Tuberculosis has certain aspects all its own. More especially it is peculiar in respect of the diversity of its clinical manifestations and its varying duration. On this account the scheme of prophylactic measures available for other infective processes requires adaptation and enlargement. While, for example, there is a stage in its course when, in the interest of unaffected persons, cases of pulmonary tuberculosis, occurring in the contracted dwellings of the poor, should be removed to hospital, it would be manifestly out of the question to propose the segregation at all.

INCIDENCE OF TUBERCULOSIS.

A word or two seems desirable as to the extent of ground to be overtaken. I am convinced that most calculations as to the incidence of tuberculosis have erred on the small side. Consideration has been confined generally to ascertained mortality in different countries. This has limited the issue unduly. The subject is particularly one where the statistician's figures require amplification at the hands of the clinician. I have made various calculations and have elsewhere stated that a reasonable basis for estimating the incidence of tuberculosis in any district, that is, in forms requiring attention, may be obtained by multiplying the recorded mortality from tuberculosis by 10. I am satisfied that this figure will be found to understate the actual fact. I believe it might be doubled without exaggeration. Time will not permit me to enter into details here. The main point to be kept in mind is that death-rates from tuberculosis represent very insufficiently the amount of tuberculosis requiring consideration from the preventive point of view.

Passing from this, may I recall to your minds the extremely varying clinical history and duration of ordinary consumption? There are cases which run an acute course in a few weeks. There are cases which may last twenty years or more. Between these two extremes there is an infinite variety. There are cases of slight, early, tuberculous infiltration. These, whether latent or progressive, may have no discharge whatever. At the other extreme, there are cases of advanced tuberculosis, commonly accompanied by abundant expectoration. Broadly, we have to separate between cases of "open" tuberculosis in which bacillus-containing expectoration is present, and cases of "closed" tuberculosis without such discharge. A distinction must be drawn between cases where the process, however extensive, remains for the most part local, and cases where the local process, whether slight or pronounced, is associated with much constitutional prejudice. We have further to separate between cases occurring in persons brought into contact with others through the exigencies of residence, work or other conditions, and those occurring in persons who lead a relatively isolated existence.

AN INTRICATE SOCIAL PROBLEM.

While these examples serve to illustrate the great variety of manifestation, they indicate most inadequately the actual intricacy of the problem. The essential dependence of the occurrence and spread of tuberculosis on prevailing conditions of social life is but partially revealed.

Tuberculosis permeates human society as does no other malady. It is one of the tolls levied on mankind because of his social habits, and society suffers through its ravages no less than the individual. It is the expression of an incomplete civilization. The social faults, of which it is the register, are, especially, deficient aëration and overcrowding. The recognition of this fact is evidenced in the measures which science and clinical experience combine to enjoin in the treatment of patients. Under conditions of hyper-aëration, the consumptive patient, even if gravely ill, frequently recovers. Yet how difficult it seems to attain for prophylaxis what we strain every effort to follow as a therapeutic procedure!

TUBERCULOSIS IN INFANTS.

The individual, from the moment he becomes a social unit, is opposed by a procession of prejudicial influences which make for tuberculosis. The room in which he is born and reared is commonly insalubrious. This seems evident when he is one of a family of six or eight in one or two rooms. The nursery is no less a factor to be reckoned with in the dwellings of the well-to-do and rich.

To the common disregard of sufficient aëration add the presence, in many instance, of actual infection within the home, either because of the presence of one or more infected individuals or because the house itself is infected. To this there must frequently be added the influence of malnutrition from improper feeding, and the possibility of infection from contaminated milk and other food supply. What a handicap is thus assigned to the individual at his entry into the social circle!

I am convinced that it is at this point that the tax is commonly levied, even if exaction of payment comes later. Every day I am more impressed with the frequency of tuberculosis lesions in infants and young children. I refer not so much to pronounced cases of pulmonary or abdominal tuberculosis, but rather to slighter manifestations which often escape notice, such as glandular infiltration in the cervical and supraclavicular regions, associated with minor degrees of pulmonary involvement.

Without entering on the vexed question of the channel of infection, a large mass of observations lead me to the conclusion that infection may occur by way of the mucous passages at any point from the oral and nasal orifices downwards. The two essential factors are devitalization of the mucous membranes and the presence of the infective organism.

While statistics of mortality in childhood emphasize the frequency of disease at this stage, there is reason to believe that infection is far more common than the death-rate would indicate. The disease lies latent — it may be, sealed in glands or limited elsewhere by cicatricial tissue — for long periods until a fresh disturbing cause reexcites to activity.

Once more, the exciting cause is usually social in origin. Perhaps it is the outbreak of measles, whooping cough or other epidemic infection. In a large number of cases it is to be found in the insanitary conditions of school life, where insufficient aëration is common, accompanied oftentimes by immediate risk of infection through tuberculosis present in children or teachers, or clinging to the schoolroom itself.

TUBERCULOSIS AMONG SCHOOL CHILDREN.

As to the occurrence of tuberculosis in school children, my observations and views differ from those of some observers. I am satisfied that tuberculosis at this age is vastly more frequent than is usually supposed. This belief is based on two separate series of observations. Without entering into details, I may give a résumé of the facts.

The first series has reference to the frequency with which school children have presented themselves at the Royal Victoria Dispensary for Consumption, Edinburgh. Thus, out of a total of 16,589 consecutive cases, no fewer than 1,917 were in children below fifteen years of age, that is, 11.5%.

The second series of observation includes my personal examination of groups of children in various schools under the School Board in the city of Edinburgh. The groups of children were selected at random by head masters as representative of different ages, and strictly without any reference to supposed delicacy or otherwise. In judging the cases I made use of three simple definite tests. In every case the tests were applied by myself, and the results carefully noted by a colleague. The tests included: (*a*) Palpation, for evidence of glandular enlargement in the cervical and supra-clavicular triangle. Only cases showing at least a dozen such enlarged glands were included as positive. (*b*) Percussion of the apices. (*c*) Auscultation of the apices. In the final determination, I regarded as tuberculous only those children who afforded positive evidence in respect to each of the three tests. In every case, and in relation to each of the tests, if there was doubt, I gave the child the benefit of the doubt. As a further correction, to exclude the possibility of error and over-refinement in diagnosis, I wrote off 15% of the whole. The net result is that no fewer than 30% of the children examined were found to present stigmata of tuberculosis.

Of immense significance in this connection is the large increase of mortality which occurs during the period of school life. Thus, taking the mortality from pulmonary tuberculosis in Scotland during three successive quinquennia from 1891 to 1905, I find that while there is a remarkable decrease in the rate as between children under one year and children under five years, amounting to 31.08% (1891–95), 29.03% (1896–1900), and 15.38% (1901–05), and while there is likewise a decrease in mortality between the ages of five and nine, amounting to 17.65% (1891–95), 25% (1896–1900), and 26.81% (1901–05), there is contrariwise a most striking increase in the death-rate of children from ten to fourteen years of age, the increase amounting in the respective periods to 90.48% (1891–95), 105.88% (1896–1900), and 90.63% (1901–05).

Unhappily, further analysis of mortality statistics raises a doubt as to whether the conditions of school life have improved *pari passu* with other sanitary progress during the fifteen years referred to (1891–1905). I find in respect of tuberculosis other than phthisis, for all children under fifteen there has occurred a slight increase of mortality during the fifteen years (1891–1905), amounting to .63%. There has been under one year of age a marked decrease of mortality during the same period. For children from one to four years there has been a slight increase of mortality, and for children between five and nine a decided increase, amounting to 8.75%, and for children from ten to fourteen years a much greater increase, amounting to 17.39%.

TUBERCULOSIS AT WORKING AGES.

What I have said of the conditions of school life applies also to conditions of industrial and business life. Here again the individual meets adverse influences in the sense of insufficient aëration, overcrowding, contaminated atmosphere, and the possibility of direct infection either from fellow-workers or from the workroom itself.

At this stage the social damage becomes more apparent. The facts yielded by mortality statistics with reference to this age are sufficiently well known and bear striking witness to the influence of social conditions. The progress of disease, which now attains its maximum, entails physical weakness and inability for work. This in turn leads to financial embarrassment and gradually increasing want, both on the part of the individual and those dependent on him. With increasing poverty, the conditions of home life become still more unfavorable both to the patient and to the other members of his household. A predisposition is effected throughout the household, and the presence of infective material establishes a vicious circle of ever-widening circumference. Certain houses tend to become veritable nests of disease.

TUBERCULOUS NESTS.

Striking evidence in this connection is afforded by an analysis of the conditions of residence obtained by domiciliary visits paid to patients who have presented themselves for treatment at the Royal Victoria Dispensary for Consumption, Edinburgh, during the past twenty years. Thus it has been found that it is quite common for case after case to recur in different families occupying successively the same dwelling, flat or tenement. I might cite many examples of this. For the present purpose it may be sufficient to quote the following:

(1) In one street of 22 houses, one dwelling, consisting of 4 flats, shows a record of no fewer than 32 separate cases of consumption in 15 different families. Quite recently, within the past few months, a newly married couple flitted to this tuberculous nest. In due course both husband and wife have developed grave manifestations of disease.

2. From one short street of 15 houses are recorded 54 cases. It is of special interest to note that, while these cases are pretty uniformly distributed among 14 of the houses, one house has actually yielded as many as 18 cases.

Apart from such glaring examples, it is not at all uncommon to find that as many as ten or twelve cases have been received from one particular house. An interesting observation emerges in connection with some of these, that the worst nests occur more commonly in streets of the *cul-de-sac* type. It may similarly be noted that in certain streets formerly of a better class, where now the sunk areas are largely occupied by working-class families, every such dwelling has provided one or several cases of consumption. In relation to the common lodging-houses of the city, hardly a month passes without a case presenting itself from certain of these.

The records of the Royal Victoria Dispensary have brought to light other extraordinary facts regarding home conditions of the tuberculous poor. Thus in respect of frequency of infection, they go to show that in 61.4 per cent of the cases there existed all the possibility for infection, that is to say, the patient had been for a prolonged period in closest proximity to, at least, one case of advanced tuberculosis. In other 11.7 per cent, direct infection seemed probable. In 26.9 per cent only did we fail to trace definite risk of infection.

An analysis of the sleeping arrangements of the tuberculous patients yields evidence of most disquieting nature. Thus it was found that in as many as 65.9% of the cases, the patient occupied the same bed with one or several persons, and in 11% more occupied the same room. When the patient slept alone, it was commonly in a bed-closet, little larger than an ordinary press.

An analysis of the number of rooms in the dwelling houses of patients emphasizes in remarkable fashion the close dependence of tuberculosis on overcrowding. Thus it was found that —

16.7% of the cases occupied dwellings of 1 room only.
47.0% " " 2 rooms.
23.8% " " 3 "

Out of 1 000 consecutive cases of tuberculosis, the dwelling houses in 167 instances consisted of one room only, which was commonly shared by numerous persons, several of whom were infected at the same time.

Thus, of 167 one-roomed dwellings containing tuberculous yatients —

3 were occupied by 8 persons each.
3 " 8 "
7 " 6 "
11 " 5 "
31 " 4 "
48 " 3 "
46 " 2 "
18 " 1 "

A PROBLEM FOR COMMUNITIES.

My purpose so far has been to show the extensive distribution of tuberculous disease, its extremely varied manifestations, its dependence on our social system and its vast ramifications.

In view of the facts, the question arises whether as communities we have adequately recognized the complex relation of cause and effect which link us to the tuberculosis problem. Have we recognized the need in self-interest — putting for the time humanitarian considerations in the background — of meeting the issue in systematic statesmanlike fashion?

As we have seen, there are indications that in most parts of the civilized world attention has been aroused. Much thought has been given to the subject, and excellent work has been done. None the less, I am firmly convinced that most existing movements fall utterly short in respect of necessary completeness and organization.

THE INDIVIDUAL VERSUS THE COMMUNITY.

I believe the cause of failure is to be found in the determination of effort too largely towards the individual patient rather than towards the disease as a social malady. The greater need is often missed.

The problem before us is not, How best to recover a certain number of sick persons and render them fit to resume work and make bread and butter once more. For the eradication of so widespread a disease, with ramifications throughout the entire social system, the outlook is much more extensive.

While the individual patient must ever command attention and pity, and his interests not be overlooked, such interests must be allowed to assume proper proportion in the larger horizon. The problem rather is, Given a disease which, speaking broadly, is responsible directly for one seventh of the mortality of the civilized world, and indirectly for an incalcuable amount of physical and economic waste,— a disease which has been proved of infective nature and which is propagated widely by environment and other social influences,— how are we to limit its spread and finally cause its eradication?

If the issue be fairly looked at, the futility of much existing endeavor becomes apparent. It is not so much that the endeavor itself is wrong, but rather that it is inadequate, indeed, utterly disproportionate, to the need. There is an absence of concerted effort to meet the larger issue.

Take, for example, the sanatorium. From one point of view the significance of the sanatorium can hardly be over-estimated. But the sanatorium is concerned only with a small corner of the field. I ventured to emphasize this view several years ago. It seemed to me that in not a few instances the conception of founding sanatoriums had been allowed to bulk too largely in anti-tuberculosis movements. The public were being led to expect too much from sanatorium régime; in respect both of individual cures and of the extinction of the disease. As the results of sanatorium treatment accumulated, and as these were found less uniformly good than the hopefulness of the over-sanguine had expected, there had begun to be manifested a feeling of vexation and almost of annoyance.

The view that the curative results of sanatorium treatment have been disappointing has been pressed strongly in published statements in different countries. This is unfortunate. To those who are familiar with the results of sanatorium treatment, any attempt to submit evidence in their favor would seem superfluous. The sanatorium admittedly constitutes an important division of the work. Still the outlook of the sanatorium is limited. Its efforts are directed chiefly towards the recovery of a certain proportion of early cases.

A COMPREHENSIVE PROGRAM.

For the eradication of tuberculosis — and it is to this that the efforts of communities must be directed — a more comprehensive program is necessary. A thoroughly organized plan of operations is required, with co-ordination of measures in respect of the different aspects to be faced. There is much to be said for uniformity of action throughout the country, and, so far as varying conditions will allow, throughout the world.

In enumerating the several factors in such a scheme I propose to dwell with greater detail on the present occasion on one of these, namely, the dispensary, because it was particularly with reference to this that the committee of the International Congress honored me with the invitation to address the Congress.

NOTIFICATION.

By way of preface, let me say that, in order to achieve success, our information regarding the extent, distribution and characters of tuberculosis in a given district must be as complete as possible. There must be an intelligence department, and the department must be efficiently manned. Having regard to the ultimate purpose of the campaign, I confess to an entire failure to understand the validity of objections which have been and are still urged against notification. It seems pre-eminently desirable that responsible authorities should be placed in possession of the facts, in order that they may conceive and frame adequate measures to meet the need. Most arguments against compulsory notification appear to me to err, in respect that they place the supposed interests of the individual in antagonism to the interests of the community. I say advisedly the "supposed" interests of the individual, for it is difficult to conceive that there can be antagonism between his interests and those of the community.

Let it be kept clearly in view that the formal intimation made to the authorities under any scheme of notification is privileged and confidential, that it is for the information of the authorities and that, in a great many instances, it need not be followed by further action of any kind.

In these circumstances I cannot realize how disadvantage can follow the procedure so far as the individual patient is concerned. On the contrary, notification is in the interest of the individual no less than in that of the community. It is only by accumulation of facts of the varying kind I have cited regarding the social influences which lead to tuberculosis that we can hope to enlist the help of the state, municipalities and other local authorities in favor of the consumptive.

The difficulties which have been raised have been largely of *a priori* character. Similar objections were advanced in connection with the notification of the acuter processes. Even were the objections of practical import, their significance is slight and temporary as contrasted with the vastness of the chronic evil we have to face.

Moreover, there is ample evidence that such objections melt rapidly away when compulsory notification is introduced. I may cite in illustration the experience of New York, Norway, Sheffield and Edinburgh.

In case of New York, as is well known, notification was required in 1893 of cases of consumption in all public institutions, and was requested voluntarily from doctors of cases occurring in their private practice. This partial and tentative measure was followed in 1897 by the official declaration by the Health Board of New York that pulmonary tuberculosis was an infectious and communicable disease, and notification of all cases of consumption was made compulsory. Compulsory notification has been enforced successfully during eleven years in one of the largest cities of the world. There is similar evidence available from many other cities of the United States. In Norway, compulsory notification has been carried out for several years without a hitch. Sheffield has had satisfactory experience of compulsory notification for four years. Edinburgh, after trial of voluntary notification since 1903, introduced compulsory notification on March 1, 1907, and no practical difficulty has occurred in connection with its operation.

In the case of Scotland, uniform procedure has been rendered possible by the official pronouncement of the Local Government Board for Scotland, in a circular dated March 10, 1906, that pulmonary phthisis is an infectious disease within the meaning of the Public Health (Scotland) Act, 1897, and that notification is necessary if the Public Health Act is to be applied effectively to pulmonary tuberculosis. Since the issue of that circular, nine local authorities have applied for the board's sanction to their adoption of compulsory notification.

AFTER NOTIFICATION?

Notification is not, however, everything. Some of its warm advocates would seem to have run away with the notion that notification is tantamount to extinction of tuberculosis, or, at least, that its adoption concludes responsibility. Contrariwise, notification constitutes the introduction only to effective procedure.

The practical import of the immensely varying manifestations of tuberculosis now becomes apparent. Tuberculosis differs from all other notifiable diseases.

In respect of acute fevers, notification is comparatively simple, both in fact and consequences. The epidemic outbreak is commonly limited, the symptoms evident and the illness rapid and short. Procedure following notification is accordingly simple and routine. The patient is either removed at once to an infectious hospital, or, if the medical attendant be satisfied that this is unnecessary, may be treated at home. Disinfection is readily achieved, whether the patient be removed to hospital or be treated at home. The incident is complete in a period varying from a fortnight to six or eight weeks.

It is different in tuberculosis. Cases are often not detected until long after infection has occurred. The symptoms of disease may be hardly noticeable at first or may be misinterpreted. The diagnosis is frequently enough missed. Even when shortest, the duration of the illness is prolonged. Special difficulties present themselves among the poorer classes, who may have no doctor or who do not think of consulting until something serious presents itself. Really the greatest practical difficulty in connection with notification of tuberculosis is to achieve it sufficiently early.

This will always prove a weakness of any scheme in which notification stands alone, that is, apart from an organized system for the treatment and relief of tuberculous patients at their own homes as well as in one or other type of hospital.

It is at this point that the significance of the dispensary becomes apparent.

IDEAL OF THE DISPENSARY.

Admitting that tuberculosis is commonly dependent on environment and other social influences, and that it is frequently a house infection, it must be our aim not merely to treat individual patients, but to trace them to their homes, to get at the tuberculous nests, to clear these out, and so prevent further spread.

This means a careful system of domiciliary visitation and investigation. Twenty years' observation has convinced me that, in the solution of the tuberculosis problem, a system of supervised home relief must play a chief part. This view was first forced on me from experience of the total inadequacy of ordinary hospitals to deal with the larger aspects of tuberculosis. This it was which led me, in 1887, to propose the institution of the Victoria Dispensary for Consumption in Edinburgh. The purpose was to erect a central institution which should concern itself in every possible way with the treatment and relief of the tuberculous poor, and to which persons of this class, suffering from colds or chronic ill-health, should be directed.

During these years it has been my lot both to organize and to be kept informed regarding the detailed operations of the dispensary. I am satisfied that the program as then proposed has been entirely justified by the results achieved.

The functions of the first tuberculosis dispensary were extensive, much more extensive than is suggested by the program proposed by certain more recent dispensaries.

The dispensary, as I conceive it, should be the center of all anti-tuberculosis endeavor within the given district. It should constitute at once the the information-bureau, the "clearing-house," in respect of all sorts of tuberculous material, and the center of supervision and treatment of such patients as may safely be treated at their own homes. It should be the connecting link or *nodus* of the entire system of anti-tuberculosis operations.

While far from disparaging the excellent work which has been achieved by the numerous tuberculosis dispensaries which have latterly sprung up in different countries, I should like to emphasize that a dispensary must remain of relatively little value when it stands alone. In such circumstances it may afford relief of various kinds to a considerable number of individual patients, but it fails to be of larger import from lack of the wider outlook in relation to a general scheme of operations. While the treatment of individual patients is a necessary and gratifying incident, the purpose of the dispensary is a still larger one.

DISPENSARY AND NOTIFICATION.

Thus, in relation to notification, the dispensary plays a twofold part. In the first place, it will prove a most important notification agency. The tuberculosis dispensary draws to itself tuberculous patients of the poorer classes at all stages of the disease who would, in many cases, either not consult at all, or might present themselves for advice under conditions where the recognition of the disease is less readily achieved. By coming to a recognized dispensary for consumption, these patients in reality notify themselves. This is of immense importance in places where a system of compulsory notification may not be in force. The dispensary is no less serviceable in presence of compulsory notification. As illustration of this, I may mention that, of all the cases notified during the first year of compulsory notification in Edinburgh, approximately 50% were notified by the Victoria Dispensary for Consumption.

In the second place, the dispensary serves a most important purpose after notification. It helps, as no other agency can, to answer the question, What is to become of the notified individual? I have compared its activity at this point to that of a "clearing-house," where the different types and groups of tuberculous disease are dealt with systematically. The dispensary forms thus, at one and the same time, a collection-bureau and distribution-bureau.

THE DISPENSARY MUST NOT STAND ALONE.

For this reason the dispensary cannot afford to be an isolated institution. Its strength and success will depend, first, on the thoroughness of its internal organization, and, second, on the closeness of its relationships with other institutions concerned in the prevention and treatment of tuberculosis. Its methods must be simple, direct and businesslike. It need not be an expensive concern. What is chiefly required is a thorough grasp by those in charge of the dispensary of its purposes and far-reaching possibilities.

THE DISPENSARY PROGRAM.

As illustration of the ground to be covered, I may cite the program of the Victoria Dispensary for Consumption, which was founded in 1887. It includes:

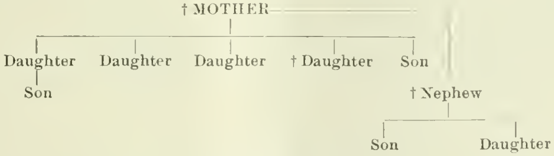
1. The reception and examination of patients at the dispensary, the keeping a record of every case, with an account of the patient's illness, history, surroundings and present condition, the record being added to on each subsequent visit.
2. The bacteriological examination of expectoration and other discharges.
3. The instruction of patients how to treat themselves, and how to prevent or minimize the risk of infection to others.
4. The dispensing of necessary medicines, sputum bottles, disinfectants and, where the patients' conditions seem to warrant it, foodstuffs and the like.
5. The visitation of patients at their own homes by (1) a qualified medical man, and (2) a specially trained nurse, for the double purpose (*a*) of treatment and (*b*) of investigation into the state of the dwelling and general conditions of life and the risk of infection to others.
6. The selection of more likely patients for hospital treatment, either of early cases for sanatoriums or of late cases for incurable homes, and the supervision, when necessary, of patients after discharge from hospital.
7. The guidance generally of tuberculous patients and their friends, and for inquiries from all interested persons on every question concerning tuberculosis.

I may add that, while the experience of twenty years has led to modifications and extension of details, no essential change has been found necessary in the program.

DOMICILIARY INVESTIGATION.

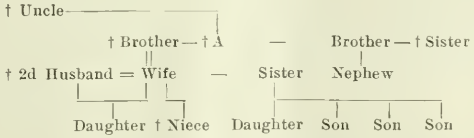
It must be sufficiently evident what a direct part the dispensary plays in the investigation and supervision of tuberculous patients at their own homes, where, from the nature of the case, a

I.



Total, 10 Cases.

II.



Total, 15 Cases.

large proportion of the patients must continue to be treated. Because of the essentially chronic nature of the disease, the dispensary will replace the hospital in the case of many patients.

By means of the domiciliary visits paid by the doctor and nurse, detailed information is accumulated regarding the conditions of the home, the patient's environment, and generally the health conditions of the household.

Particular attention is paid to other members of the family. They are invited to submit themselves for examination either at home or at the dispensary. The value of this proceeding can hardly be overestimated. The wide distribution and ramifications of tuberculosis are thus amply realized.

I might multiply examples in illustration, but those cited will serve our purpose. In each instance the primary patient is indicated by darker type, while secondary patients, that is, those who came under the direction of the dispensary as results of domiciliary visits, are shown in ordinary type. A cross indicates that the patient in question was cared for by the institution up till death.

Systematic visitation has also brought to light the great frequency with which the tuberculous patient, for one reason or another.— often from pecuniary considerations,— changes his residence. Thus, in the clientèle of the Victoria Dispensary, it was found that no fewer than 41% of the patients had changed residence within two years, thus multiplying infected areas.

OTHER RELATIONSHIPS.

The dispensary is in intimate relationship with the sanatorium for the cure of selected cases. It chooses for this purpose from its extensive clientèle such patients as are likely to do well, and who require and deserve help. The dispensary also concerns itself, when necessary, with the after-care of patients discharged from the sanatorium.

The dispensary is, further, in close touch with hospitals, municipal or other, which afford provision for advanced, incurable cases, with a view to their segregation. The erection of such isolation hospitals is urgently called for as a factor in the campaign. The Local Government Board of Scotland has concluded that the isolation of such dangerous cases is a primary duty of the local authority.

The dispensary occupies itself likewise with the selection of suitable employment of light, open-air nature for consumptive patients who may not require hospital treatment. This is a valuable department of activity. Many families have, in my experience, been thus saved from destitution. School children affected by tuberculosis are similarly watched over and removed from school in their own interest and that of others, and their education supervised on physiological lines.

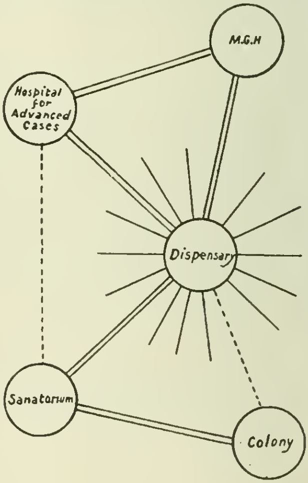
Moreover, the dispensary has connections with other hospitals and charitable institutions for the double purpose of giving information and advice regarding patients who may be in such institutions for whom other arrangements may be necessary, and of drafting to such institutions suitable cases from outside.

The dispensary comes to fulfill an important function in case of financial distress which is often present. Families and dependents of patients are, through the agency of the dispensary, not only safeguarded in respect of their health, but, when the chief wage-earner is affected, are brought into touch with one or other charitable fund. Inquiry is directed to such points by the nurse and members of the Samaritan committee.

The dispensary, in this way, forms the connecting link between all agencies concerned in any way with the treatment or relief of the tuberculous poor.

CO-ORDINATION OF MEASURES.

Rehearsing for a minute or two the points which have been considered, my conception of a working scheme for the prevention and treatment of tuberculosis in an urban district will be readily understood by reference to the accompanying sketch, which actually represents the plan of operations now conducted in the city of Edinburgh. It shows the dispensary as the center of inquiry and guidance in all matters concerning tuberculosis. It shows the relationship of the dispensary to the public health service (M. G. H.), of which it forms in many ways an important instrument. It shows the dispensary's relationship to the hospital for advanced and dying cases on the one hand, and, on the other, to the sanatorium for early cases, with the extension of the sanatorium in the colony for convalescent patients.



With comparatively slight modification, the scheme is realizable in country districts equally well.

The Local Government Board for Scotland have adopted the scheme which has been elaborated at Edinburgh as a national system for the administration of the campaign against tuberculosis in Scotland.

SOCIAL PROGRAM OF MUTUAL EFFORT.

To sum up, we have seen the essentially social character of the tuberculosis problem. We have seen how social habits and faults are responsible for the occurrence and spread of the disease. We have seen how the individual suffers because of his social environment and how society suffers in turn because of the tuberculous individual. From all this it is clear that society has a double duty, that is, a duty both to the individual and to itself.

How are we to apportion and deal with the several aspects of responsibility?

OFFICIAL AND PHILANTHROPIC CO-OPERATION.

It is sufficiently evident that a vast field exists for anti-tuberculosis endeavor. There is abundant room alike for official and for philanthropic effort. If it is to be effective, it is essential that the efforts be organized and harmonious.

The official outlook — that of the state, municipalities and other local authorities — is specially towards prevention. The philanthropic outlook is towards the cure and the relief of the individual. The two spheres are closely linked, and successful effort in the one is projected into the other.

Within the official sphere falls especially the institution and direction of a scheme of notification. To the same sphere belongs dissemination of information in matters relating to the prevention and limitation of tuberculosis, and the practical carrying out of disinfection.

Intimately related to this is the system of domiciliary visitation which forms so important a part of the dispensary's activity. The dispensary thus forms a link between the tuberculous poor and the authorities. I am so much impressed with the extreme significance to the community of the various operations of the dispensary that I believe the dispensary should either be worked by the municipality or other local authority itself, or at least be in close touch with such authority.

The more intimate the connection, the better. For a large proportion of patients, and for long periods — it may be throughout the entire illness — the dispensary will take the place of the hospital in respect of care and general direction. On this account the dispensary should be closely related to, if not an actual part of, the public health service.

To the official sphere should certainly belong the hospital for advanced and dying cases. The purpose of these hospitals is entirely different from that of the sanatorium. Such cases ought to be segregated on grounds of public health and in the interest of the unaffected citizen. This is emphatically a department of the work to which public funds are legitimately devoted.

Within the philanthropic sphere falls naturally the sanatorium for early cases. The sanatorium exists especially with a view to the effective cure of individuals at an early stage of the disease. Sanatoriums are suitably maintained by charitable effort, by contributions of patients or of private friends interested in particular patients, by workingmen's sick and benefit societies, in varying fashion, according to the varying conditions of different countries, and by local authorities, in so far as the efforts of these can extend, after due regard has been paid to the other claims which have been cited.

Within the philanthropic sphere fall similarly extensions of the sanatorium in the direction of working colonies, after-care associations and the like, which may be multiplied indefinitely according as the need presents itself.

To this sphere also belong the various voluntary agencies, associations, leagues, etc., which, as the anti-tuberculosis movement extends throughout the world, serve to effect a popular propaganda until such time as the complete organization can be attained.

LEGISLATIVE ACTION.

As the *motif* for anti-tuberculosis organization becomes better apprehended, it will gradually cease to be a matter for private initiative and enterprise. Communities will be compelled to face the matter in thoroughgoing fashion.

Subject to modification dependent on local conditions, a scheme of co-operative measures must be elaborated which will recognize the rôle and significance of public and private effort respectively. The scheme will necessarily combine the application of sanitary principles, in the broadest sense, with more direct, offensive measures against the tubercle bacillus. This implies the co-operation of public health authorities, local authorities and legislators.

ILLUSTRATIVE CHARTS.

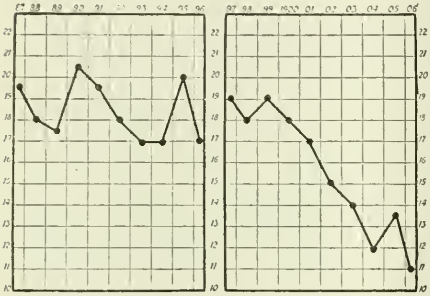
The accompanying charts illustrate several points of interest in relation to tuberculosis during the past twenty years.

I have selected that period for the reason, first, that it represents approximately the time during which more definite efforts have been made in any country against tuberculosis. In the second place, the twenty years happen to correspond with the activity of the Edinburgh organization, which commenced with the establishment in 1887 of the Victoria Dispensary for Consumption. In preparing the present address I have drawn largely from the evidence which has been gradually accumulated by that institution.

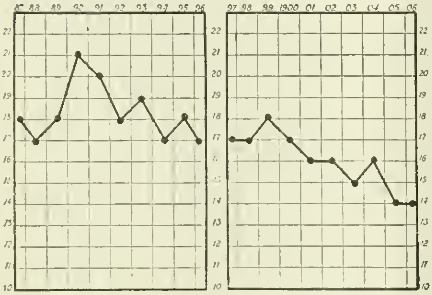
The charts show the curve of mortality from pulmonary tuberculosis for London and Edinburgh respectively. I have divided the period into two periods of ten years each. During the first of these periods, necessarily the direction of anti-tuberculosis effort was rather indefinite.

Even when anti-tuberculosis effort had assumed more definite shape, time was needed before the effect of effort began to register itself in the death-rate.

The curves are interesting in both cases. They illustrate sufficiently what has been frequently pointed out, namely, the steady improvement in relation to tuberculosis which is in progress in many centers.



In the case of Edinburgh, I think, without straining the point, the curve affords significant evidence of the influence exercised on tuberculosis by the institution of organized and coordinated effort. In addition to less definite agencies, there has occurred in Edinburgh from 1887 onwards the gradual evolution of an anti-tuberculosis scheme, including the dispensary, with its system of domiciliary visitation, etc., the sanatorium, the hospital for advanced cases, the working colony and finally compulsory notification.



The charts show how, from 1887 onwards, the mortality from tuberculosis has fallen progressively. The Edinburgh fall during the *latter* ten years is especially striking. It is quite out of proportion to that of the precedent ten years and remarkably more rapid than that shown in the London curve. It seems fair to associate this to some degree with the development of the completer organization.

The view is confirmed by comparison of the curves in the case of the other chief cities of Scotland. Without reproducing the entire curves I content myself with citing in tabular fashion the death-rate per 10,000 of the population at the close of each period of ten years, and at the middle of the latter period.

Death-Rate from Pulmonary Tuberculosis per 10,000 of Population in the Principal Towns of Scotland (1897, 1901, 1906).

	1897.	1901.	1906.
Glasgow	20.3	18.5	15.6
Dundee	22.3	17.2	16.9
Aberdeen	16.7	13.9	12.2
Leith	21.2	19.2	12.7
Paisley	17.8	16.6	12.8
Greenock	20.7	14.8	13.2
Perth	22.1	16.1	17.9

If these figures be compared with those embodied in the curves for London and Edinburgh, the rapid fall in the case of Edinburgh, especially from 1900 onwards, appears even more remarkable. Of other towns in Scotland, that which most approximates Edinburgh, so far as these statistics are concerned, is Leith. It is worthy of note that, although Leith is a separate municipality, it is actually continuous with Edinburgh. Many patients from the smaller town receive treatment at the dispensary or at the sanatorium in Edinburgh. Without detracting from the credit due to the anti-tuberculosis activity of Leith, it seems fair to suggest that the striking fall in mortality in Leith, as compared with other towns in Scotland during the last half-dozen years, may be, in part, traceable to the organized program which has been operative in Edinburgh for a prolonged period.

EFFECTIVENESS THE MEASURE OF SUCCESS.

In thus reviewing the subject and citing statistics to illustrate the significance of organized effort against tuberculosis, it is far from my wish to press conclusions further than the facts seem thoroughly to warrant.

It has been my endeavor to divest myself for the time being of any relationship to existing operations, and to weigh the facts in a judicial spirit. The conclusion appears to me unavoidable that the measure of success in the anti-tuberculosis campaign is governed by the degree of completeness and efficiency of the program which is adopted.

An effective program against tuberculosis demands a clear conception of the vast extent of the campaign, concentration of effort, thorough organization and harmonious co-ordination of measures. With such a program, history and analogy promise alike that a successful issue is assured.

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Denmark's Sanatorium Provision for Tuberculous. — The *Tidsskrift for den Norske Lægeforening* states that the completion of the sanatorium at Nakkebolle gives a larger number of beds in the popular tuberculosis sanatoria than there is *per capita* of the total population in any other country. The sanatoria can now accommodate 1,000.

Original Articles.

BURSITIS SUBACROMIALIS, OR PERI-ARTHRITIS OF THE SHOULDER-JOINT. (SUBDELTOID BURSITIS.)*

BY ERNEST AMORY CODMAN, M.D., BOSTON.

The cases which are to be discussed in this paper are by far the most common lesions of the shoulder-joint. It is the writer's experience that more patients seek hospital treatment for lesions involving the subacromial bursa than for all other lesions of the shoulder-joint, including tuberculosis and fractures, added together. Not only is this true, but it is also true that more cases of subacromial bursitis seek hospital treatment than all the cases of the supposedly more common forms of bursitis such as "miner's elbow," "housemaid's knee" and "weaver's bottom." In those clinics in which these statements are apparently not true it will be found that these cases are passing unrecognized under the diagnoses of brachial neuritis, peri-arthritis, muscular rheumatism, circumflex paralysis, contusion of the shoulder, fibrous ankylosis, gout, rheumatism and other vague terms.

If one seeks information on this subject from the literature, he must grope among the articles on peri-arthritis and fibrous ankylosis. He will find the clinical picture of the severe adherent type of cases, which I have spoken of as Type II, described again and again under the title of peri-arthritis. An article by Duplay[1] in 1872 describes in detail with characteristic beauty of diction the clinical picture of these cases and gives a good general explanation of the pathological condition. It is a pleasure to see the accuracy of his observation; his perfect description of the clinical condition can never be improved on. Putnam,[2] in 1882, has given us an admirable description of the same class of cases. Douglas Graham,[3] in his "Treatise on Massage," p. 372, written in 1884, expresses in a nutshell the understanding of the subject at that date. "Peri-arthritis of the shoulder-joint, a subacute or chronic inflammation of the subacromial bursa and of the loose areolar tissue under the deltoid, with thickening and the formation of adhesions entangling nerves and tendons, hindering motion and setting up neuritis, while the articular surfaces are in a normal condition, is a very stubborn affection."

This definition, although somewhat general, expresses a clearer conception of the condition than any other I have seen, until the appearance of Küster's[4] paper in 1902, which gives us the first clear explanation of the mechanical importance of the bursa. Even Küster apparently considers the cases of subacromial bursitis exceptional rather than common, for he only makes a diagnosis when *external rotation is free*. This error accounts for his not appreciating the frequency of this condition, for in most cases *external rotation is not free* (see Figs. 3 and 4). My own work on this subject was done before seeing Küster's paper, which, however, antedates mine by four years and contains most of the important observations which I made. It is not my intention to give a bibliography of this subject, because Küster's paper opens a new era in it, and Duplay's monograph represents the previous knowledge of the subject. Papers by Painter[6] and Baer[7] which have followed mine will be discussed later.

In May, 1906, I published a paper on "Stiff and Painful Shoulders,"[5] in which I unfortunately used the term "subdeltoid" instead of "subacromial" bursitis.† It has been a great pleasure to me that this paper has received attention from other surgeons, both here in Boston and in other cities. Many questions have been asked me in regard to it, and it is in part to answer these questions that the present paper is written. It is in a way a supplement to the other, and is intended to make clear some of the points which were obscure in the former one. Another reason for my making a report on this subject now, is that during the summer of 1906 my colleagues at the Massachusetts General Hospital, not only in the surgical, but in the orthopedic, nerve and medical departments, were kind enough to turn over their shoulder cases to me for study. The experience has been very valuable to me and I feel that in some measure it is incumbent on me to make a report of this experience to the other gentlemen who were kind enough to allow me the temporary use of their material. Thanks to their kindness, and from cases in my private practice, I now have complete notes on 75 cases of lesions of the subdeltoid or subacromial bursa. Besides these, I have seen a large number of other cases, on which, during the pressure of my regular work at the hospital, I have not had time to take careful notes.

ANATOMY.

In reviewing my former paper there are one or two points in the anatomy of the shoulder which I perhaps did not dwell on enough. I did not make it clear enough that the subdeltoid and the subacromial bursa are one and the same thing. Some anatomists have described two bursæ, but my experience is that careful demonstration shows that there is usually but one. Subacromial bursa is really the better name, for in abduction the whole bursa is subacromial. The subdeltoid bursa is the portion which in adduction lies beyond the edge of the acromion under the fibers of the deltoid. The relative size of the two portions will, of course, vary with the position of the arm, for the tuberosity moves in and out, carrying the floor of the bursa with it. (Figs. 1 and 2, 3 and 4.) In some rare cases the subdeltoid portion may be separated from the subacromial portion by thin septa of serous membrane which move freely in the bursæ and, as explained in my former paper, resemble the nictitating membrane in a bird's eye.

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* Read before The Massachusetts Medical Society, June 9, 1908.

[1] Duplay: Arch. gén. de méd., November, 1872.

[2] Putnam: Boston Med. and Surg. Jour., Nov. 30, 1882.

[3] Graham: Treatise on Massage, 1884, p. 372.

[4] Küster: Arch. für Klin. Chir., vol. lxvii, p. 1013, 1902.

† Bursitis subacromialis is the name used by Küster. I regret that I did not use this name for the title of my former paper, and I hope that the next writer on this subject will adopt Küster's name. His paper is the only one which I have ever seen which shows at all an adequate appreciation of the function of this bursa.

[5] Codman: Boston Med. and Surg. Jour., May 31, 1906. Ohio State Med. Jour., Aug. 15, 1906.

[6] Painter: Boston Med. and Surg. Jour., March 21, 1907.

[7] Baer: Johns Hopkins Bull., Nos. 195, 196, June, July, 1907.

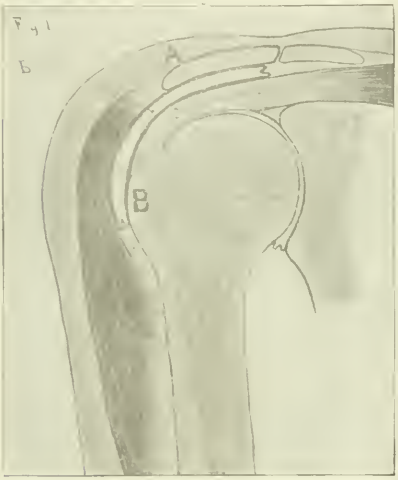

Fig. 1.

Fig. 1 is a diagram from a frozen section. Notice the deltoid and its origin from the edge of the acromion. Notice the subdeltoid or subacromial bursa with its roof made by the under surface of the acromion and by the fascia beneath the upper portion of the deltoid. Its base is on the greater tuberosity and the tendon of the supraspinatus which separates it like an interarticular fibrocartilage from the true joint.

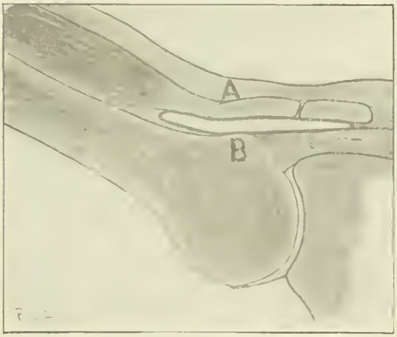

Fig. 2.

Fig. 2 illustrates the condition which would be found in abduction, the tuberosity having passed under the acromion and the point (B having passed the point (A). The elastic deltoid has taken up the slack at one end and the supraspinatus at the other. It is obvious that the floor of the bursa, as it lies on the tendon of the supraspinatus and the tuberosity, must be a smooth, even, rounded surface. As a matter of fact, the first time one cuts into the bursa one is almost startled to find how much the floor of it looks like the cartilaginous surface of the bone.

It is obvious that if the surfaces of the bursa between the points *A* and *B* in Fig. 1 were adherent, it would be impossible for the joint to pass into the position shown in Fig. 2.

It is well to bear in mind that the base of the bursa is firmly attached to the top of the tuberosity and the tendinous expansion of the supraspinatus, and that the roof is firmly attached to the underside of the acromion and coraco-acromial ligament. It is the loose periphery of the bursa which is movable and which, rolling on itself, allows the roof to slide on the base. This is true of bursæ in general.

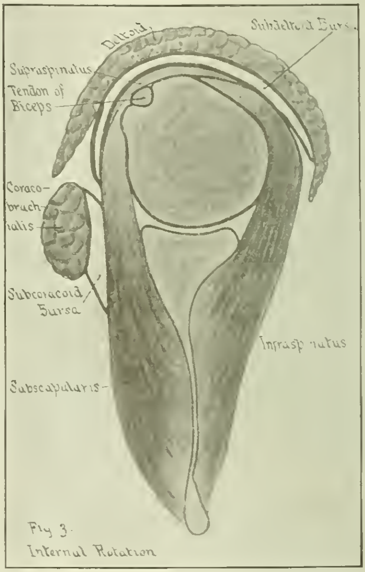

Fig. 3.

Figs. 3 and 4. A diagrammatic representation of a horizontal section through the head of the humerus to indicate the lateral extent of the bursa and the necessity for its existence to allow the greater tuberosity to rotate beneath the deltoid. Notice also how the tendon of the infraspinatus is stretched around the head of the bone in internal rotation and how the tendon of the subscapularis is stretched around the head in the opposite direction in external rotation. This stretching occurs not in the tendons themselves, which are very short, but in the muscles which by their construction take up the slack of the capsule of the joint. In fact, the capsule of the joint is really made up of the tendons and muscular bellies of these short rotators. It can be easily imagined how a simultaneous spasm of these muscles would lock the joint, for, in the normal motion, one must relax as the other contracts. Notice also the cross section of the coraco-brachialis and the necessity for the subcoracoid bursa which lies between it and the subscapularis. Since the two mucles work at right angles to one another the bursa is indispensable.

I should have also accentuated the size of the bursa. I said that it was roughly the size of the palm of the hand. Baer and Painter, who have since written on the subject, speak of it as the size of a half dollar. Perhaps I have magnified it, certainly they have minimized it. One of the smallest specimens I have measures 2½ inches in diameter, and I have seen many that are larger. A silver dollar is 1½ inches in diameter. The bursa between the coraco-brachialis and the subscapularis, which frequently is a part of the subacromial bursa, but may be separate, is just about the size of a half dollar. The other bursæ which exist about the shoulder-joint are roughly the size of a silver quarter. I purposely do not dwell on the anatomy of these other bursæ because I believe they are relatively unimportant. Undoubtedly inflammation occurs in these other bursæ, but it can never be of the paramount importance that inflammation in the subacromial bursa is, because of the mechanical importance and exposed position of the latter.

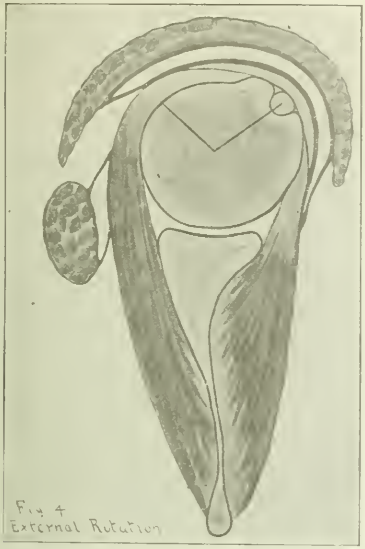

Fig. 4.
For legend, see Fig. 3.

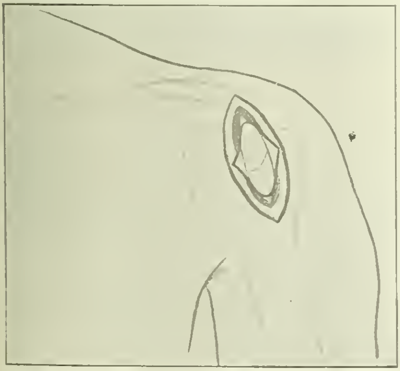

Fig. 5.
Showing incision used for demonstration of the bursa. For enlargement of same, see Fig. 6.

To demonstrate the subdeltoid or subacromial bursa the following method is the most satisfactory I know and is the same method used for operation in the living. A fresh cadaver at autopsy is a more satisfactory subject for demonstration than the frozen and dried specimens usually found in a dissecting room.

Flex the elbow to a right angle and hold the humerus at the side in a position midway between internal and external rotation of the humerus, i. e., with the axis of the forearm pointing directly forward. Find the external lip of the bicipital groove and make over it a vertical incision two inches long from the edge of the acromion downward. (See Figs. 5 and 6.) Separate the fibers of the deltoid as the fibers of the rectus are separated in a laparotomy until the cellular tissue is clearly exposed. With the same care as is used in entering the peritoneal cavity lift up the cellular tissue with two pair of forceps and incise between them. When the serous lining of the bursa is nicked, carefully enlarge the incision upward and downward and clamp the edges of the serous lining on each side. Now hold these clamps as retractors to open the wound and have an assistant rotate the humerus so as to make the base

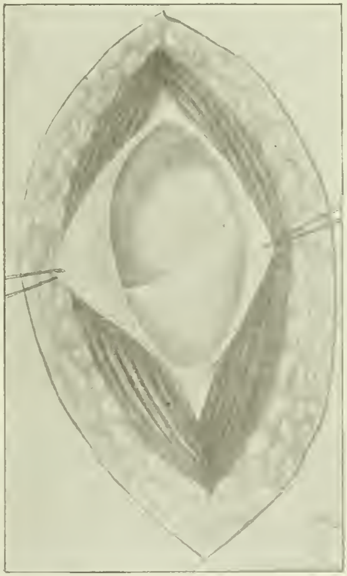

Fig. 6.
Fig. 6 illustrates the appearance when an incision into the normal bursa has been made. The extremely thin superior layer of the bursa is caught with sutures and the smooth shining base is seen in the middle. The base can be moved by rotation of the arm without moving the superior layer. In the lower portion of the wound is seen one of the "nictitating folds."

pass to and fro beneath the incision. Then pull down hard on the arm and the air will rush into the subacromial portion. A finger may then be introduced into the cavity of the bursa between the tuberosity and the acromion.

Any method of demonstration depending on dissection after the injection of sold or semi-solid substances into the bursa under pressure is apt to be deceptive, because normally the bursal surfaces are closely apposed and when injected the increase in the third dimension must be compensated by a corresponding diminution in diameter and circumference.

Motions of the humerus. — When I speak of external rotation of the humerus I mean rotation of the humerus itself. This is best tested in the following manner: Flex the elbow to a right angle, hold the elbow to the side and carry the forearm outward, still keeping the elbow at the side. In a normal person the axis of the forearm in complete external rotation will stand in the sagittal plane. Internal rotation is tested in much the same way with the elbow flexed, but since the body would interfere with complete internal rotation beyond the sling position, the hand must be placed behind the back to get into the extreme position. Care should be taken meanwhile to follow the motion of the scapula, which is capable of a considerable amount of rotation.

By abduction of the arm, I mean raising the arm directly upwards from the side of the body in the sagittal plane. This may be done either in internal rotation or external rotation. Abduction in internal rotation cannot be carried within a considerable number of degrees as high as it can in external rotation. As I have previously explained, this is due to the shape of the head of the humerus. This fact may be tested by endeavoring to raise the arm with the elbow flexed in internal rotation as high as possible; if it is then rotated outward it may be raised still higher. Conversely it may be tested by raising the arm to as nearly a vertical position as possible, then flexing the elbow without moving the shoulder; it will then be found that the humerus is rotated as far outward as possible; it cannot be rotated further outward, but may be rotated inward.

By elevation of the arm, I mean practically the same thing as abduction, except that elevation implies a departure from the sagittal plane toward the frontal plane. As far as I know, there is no anatomical name for this motion. It is really a combination of abduction and external rotation.

In explaining this subject to students I find that many do not realize that during abduction of the arm the greater tuberosity actually passes beneath the acromion and coraco-acromial ligament. They appear to think that the motion is limited by the impingement of the tuberosity on the acromion. I think this false conception is due to the usual method of articulating skeletons used for anatomical study, which does not allow the tuberosity to pass under the acromion.

A point which I did not accent sufficiently in the former paper was the function of the supraspinatus in abduction and elevation of the arm. The diagrams (Figs. 7 and 8) illustrate the importance of the supraspinatus as an abductor. It is generally supposed that the deltoid is an abductor of the arm, but I believe it can be shown that the deltoid is not an abductor unless accompanied in its action by the supraspinatus. The deltoid alone tends to press the head of the humerus up under the acromion process.

A consideration of Figs. 7 and 8 will demonstrate the importance of the function of the supraspinatus in abduction of the arm. In Fig. 7 is shown how the supraspinatus applies its power on the short arm of the lever *P F*. A mechanically perfect sliding fulcrum is obtained on the glenoid.

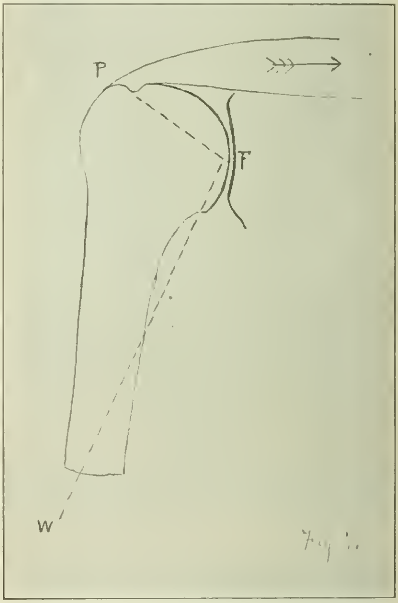

Fig. 7.
Showing how power is applied by supraspinatus.

In Fig. 8 is analyzed the application of the power of the deltoid to the point *O*. If the power were applied by the outer fibers *O—P* a fulcrum could not be obtained on the glenoid but would be obtained on the acromion, which, since it is not provided with articular cartilage, is obviously unfitted for this function. On the other hand, if the power were applied by the inner fibers *O—P′*, the glenoid could only act as a fulcrum in adduction. The resultant of the action of all the fibers tends to drive the head of the bone directly upward under the acromion.

When, however, both muscles act simultaneously, the power applied by the supraspinatus furnishes a fulcrum for the power of the deltoid.

(See Fig. 1.) As the lines of force of the two muscles approach one another (Fig. 2) the deltoid is able to obtain a fulcrum on the glenoid. In normal action the glenoid bears all the weight and the power of the supraspinatus keeps the tuberosity from seeking a fulcrum on the acromion and coraco-acromial ligament. The function of the bursa is to avoid friction at this point.

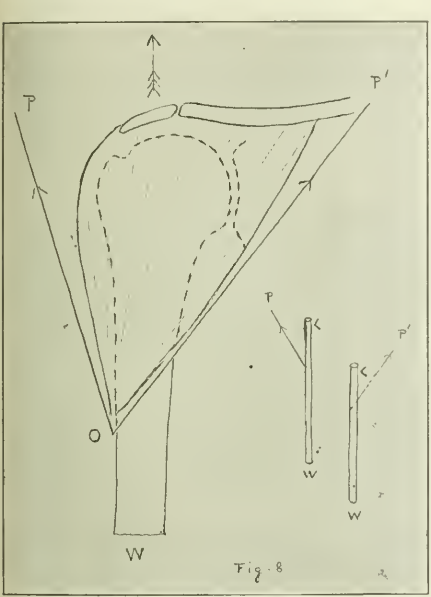

Fig. 8.
Showing how power is applied by deltoid.

Soreness in the bursa or of the tendinous insertion of the supraspinatus throws the latter out of action and the deltoid alone cannot perform abduction. Duchenne has reported a case of circumflex paralysis where the supraspinatus alone was strong enough to perform abduction.

The combined action of the two muscles is so habitual that one cannot voluntarily disassociate them in abduction although one frequently uses the power of the deltoid alone to raise or square the shoulder, and, *vice versa*, in lowering the shoulder to the position of round or sloping shoulder, one abducts the scapula on the humerus by using the supraspinatus. Even in the latter motion one cannot disassociate contraction of the deltoid.

In my former paper I spoke of the bicipital groove and the sheath of the tendon of the biceps as being entirely separated from the base of the bursa by the expansion of the supraspinatus. I am inclined to think that lesions of the serous sheath about the biceps tendon are rare, but it is possible that in some cases I have confused them with subdeltoid bursitis. One is apt to think that the biceps tendon moves through this sheath when the biceps is contracted or expanded, as in flexing and extending the elbow. A moment's consideration shows that this is not so. The tendon might be absolutely fixed to its sheath and yet allow these motions. The sheath is really functional in motions of the humerus on the scapula whether the biceps is contracted or not. For instance, a motion of the humerus backward and forward on the scapula in the frontal plane causes this tendon to pass through the sheath whether the biceps is active or not. This gives a diagnostic point. In cases of subacromial bursitis a considerable backward and forward action is allowed without calling in play the service of the bursa.

Another anatomical fact of great importance is this: that the ligamentous capsule of the shoulder-joint is a very insignificant structure and that the real capsule of the joint is a muscular one formed by the subscapularis, the supra- and infraspinatus and the teres minor. These muscles have tendinous expansions at their insertions, but the muscular bellies completely surround the joint.

Before turning from the anatomy of this subject, I want to express my most sincere thanks to Professor Dwight, of the Harvard Medical School, for his kind assistance in allowing me the use of material in the Anatomical Department, and for his advice and suggestions. I am happy to say that in Piersol's recent anatomy, to which Professor Dwight has largely contributed, is to be found the only good description of the subacromial bursa which I know of in any anatomical work.

(To be continued.)

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THE SERUM TREATMENT OF EPIDEMIC CEREBROSPINAL MENINGITIS, WITH A REPORT OF TWENTY-TWO CASES.*

BY FRANK TAYLOR FULTON, M.D.,
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The treatment of epidemic cerebrospinal meningitis by a specific antiserum prepared at the Rockefeller Institute by Drs. Flexner and Jobling has been carried out in enough cases to leave no good ground for doubting its usefulness. Flexner and Jobling[1] have recently presented a brief analysis based upon about 400 cases so treated. These cases were treated in various parts of this country and in Great Britain. The mortality was 25%, there being 75% of recoveries. In their conclusions they are very conservative, and inasmuch as the mortality of the disease varies so much in statistics compiled at various times and various places, the reserved judgment is wise. On that account, too, it is, perhaps, well that, as series of cases are observed and treated with the serum, each be separately analyzed, in order that by prolonged trial and careful study the actual value of the method of treatment can be determined. It is fortunate that the early use of the serum could be so well controlled as it has been by Dr. Flexner. His method has been to select some one person in a given locality to distribute the serum, to confirm the diagnosis by bacteriological examination, to supervise the treatment under his advice, to make or have made careful observations and to collect and report data.

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* When this paper was written in August the series included but nineteen cases. Three cases have occurred in the Rhode Island Hospital since and all of them have recovered without sequalæ. This makes the total number of cases twenty-two, with fifteen recoveries and seven deaths. In figuring the mortality, then, of the entire series, if we eliminate the chronic and moribund cases, the recoveries would be 83⅓%, with 16⅔% of deaths. The total mortality, including the chronic and moribund cases, is a fraction over 31%.

[1] Jour. Am. Med. Asso., July 25, 1908.

The comparative infrequency of the disease has made this essential in order that results may be better judged.

If this method can be continued it will enable one still better to know how frequently and in what dosage the serum should be given so that possibly some of the more resistant cases may also be cured.

Several series of cases have been already reported by Flexner and Jobling,[2] Dunn,[3] Churchill,[4] Miller and Barber,[5] Sladen,[6] Chase and Hunt[7] and Robb.[8]

Since Jan. 1, 1908, there have been observed and treated with the serum, 19 cases of epidemic cerebrospinal meningitis in Rhode Island, most of them in Providence. Fifteen of these cases have been treated in the Rhode Island Hospital, eight of them on the service of Dr. George L. Shattuck and seven of them on the service of Dr. Eugene Kingman.[9]

Whether the disease as it has existed in Providence and vicinity during this year has been any milder than the ordinary type, it is difficult to say. In view of the fact that three of the cases were moribund before coming under observation, one at the end of the second day, another at the end of the sixth day and the third on the fifth day, it may be judged that the type of infection is at least a severe one. Several of the cases which were treated and recovered were clinically very severe, showing delirium which continued for days, in some instances associated with repeated convulsions. Dr. Kingman, in a paper subsequently to be published, will present the comparative mortality between the cases which have been treated with the serum and the cases which have occurred in the Rhode Island Hospital during forty years previous to the institution of the serum treatment.

Dunn has tabulated his cases in an excellent way for the purpose of reference and analysis, and in order that the same comparison may be followed out I have thought it well to use practically the same headings in my tabulation as he used in his.

ADMINISTRATION OF THE SERUM.

The technic of the administration has been frequently described, so that will not be touched upon in detail. In all cases the serum was injected into the spinal canal. In nearly every instance the dose was 30 ccm. It was the custom to repeat the dose at intervals of twenty-four hours for several days, the number of doses depending upon the severity of the case. Flexner suggests that in the severe cases a larger dose be given, perhaps 45 ccm. or 60 ccm., and a longer interval be allowed to intervene before the next dose. No case has received less than three doses excepting those which died immediately, and the number has varied from three to seven, with the exception of two cases, in one of which, a very severe case, thirteen doses were given, and in another, a case which relapsed repeatedly, twenty-two were given. I have noticed no mention of so much serum (660 ccm.) having been given to one patient, but the treatment seemed justified by the fact that each of the three attacks responded quite readily to serum treatment. It is probable that some of the cases would have recovered and, perhaps, just as satisfactorily, with fewer doses of serum. On the other hand, it has been suggested that a relapse is more likely to occur in a case which has been treated with serum than in a case spontaneously recovering, and the use of one or two doses after the symptoms have abated considerably seems to me not unwise. I have had a feeling that the only relapse case which we have had would not have relapsed if he had been in the hospital and had had more serum during his first convalescence.

It has been the custom to have the patient under an anesthetic, either chloroform or ethyl chloride. As a rule there is more or less pain with the lumbar puncture and if the patient is actively delirious or is an active unmanageable child, there is considerable danger of breaking off the needle in the spinal canal, an incident which occurred once, or of having the needle partially withdrawn during the injection of the serum. No apparent ill-effects have followed the repeated use of an anesthetic. In a few instances in which the anesthetic was not used the immediate effect of the injection of the serum was to produce sleep. This, however, was only temporary and if the patient had been actively delirious before, this delirium would likely reappear within fifteen minutes or half an hour.

In one instance, in a child of less than two years, there was marked disturbance of the respiration, the child gasping somewhat for, perhaps, a minute or two after the injection was completed. It may have been that the injection was made rather too rapidly or it may have been the effect of the large amount of serum on such a young child, and suggests that in the very young unusual caution in administration should be used.

MORTALITY.

I have reported in all 19 cases. Three of the cases, however, died in less than twenty-four hours after receiving the serum; and if they are left out of the tabulation, as Dr. Flexner suggests in his last publication they should be, 16 cases would be left.

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[2] Jour. of Exp. Med., Jan. 1, 1908.
[3] Jour. Am. Med. Asso., July 4, 1908.
[4] *Ibid.*
[5] *Ibid.*, June 13, 1908.
[6] Johns Hopkins Hosp. Bull., August, 1908.
[7] Arch. Int. Med., April, 1908.
[8] Brit. Med. Jour., Feb. 15, 1908.
[9] Dr. Shattuck and Dr. Kingman have both been very actively interested in the administration of the serum, and through their co-operation and advice they have aided materially in the successful treatment, and to them I am indebted for the privilege of presenting abstracts of the histories of the hospital cases.

Another of the fatal cases came under observation in the sixth month of the disease and it does not seem fair to allow it to bear weight in the evidence of the usefulness of the serum. By eliminating this one, also, 15 cases remain which were efficiently treated. Of these fifteen, twelve recovered and three died, a mortality of 20%, and in one of the fatal cases the treatment was refused by the family after the third injection. The patient lived about three weeks longer, so that it remains open to question whether with more efficient treatment he might not have recovered.

THE FATAL CASES.

Of the seven fatal cases, three were practically moribund when first seen. One of the cases was seen on the sixth day and died within twelve hours of the administration of the serum. Another, a child of two years, had been ill for four days and had been comatose for more than two days. This child lived twenty-three hours after receiving the serum without any change in its condition. The third of the three was a child of two years which was pulseless on admission, having been ill for two days. There was marked cyanosis and edema of the lungs. The child died while the serum was being administered. Sixty-five cubic centimeters of fluid were withdrawn, so that the injection of 30 ccm. even in such a young child could scarcely have had anything to do with hastening death. The fourth was a chronic case which had been sick for a little more than five months. He was given three doses of serum with no improvement, returning home and dying a few weeks later. The fifth patient had been ill about ten days, received three doses of serum and the family then refused further treatment. This patient lived twenty-one days after the treatment was discontinued. The two remaining cases on admission seemed very favorable. One was a negro adult who had been sick about three days. He had had previous attacks of delirium tremens and just before being taken with this illness had been on a prolonged debauch, so that his illness was at first thought to be delirium tremens. Treatment was begun on the third day and was continued daily for six days, the seventh dose being given on the eighth day. The cerebrospinal fluid became perfectly clear but the temperature continued high and the patient gradually passed into a state of low muttering delirium with the coarse muscular tremor so characteristic of delirium tremens. He died on the fifteenth day of his illness, about four days after the treatment was discontinued.

The last fatal case, which was the last patient treated in this series, was a boy of seventeen who came in on the second day with a temperature of 106° F. His temperature fell almost to normal with the first dose of serum. He received serum daily for four days, the fifth dose on the sixth day. There was temporary improvement in his condition and also in the cerebrospinal fluid, there being no organisms found and no growth after the first dose of serum; after the second dose there was a scanty growth; after the third and fourth doses an abundant growth. In both of these cases the leucocyte count was low.

THE CASES OF RECOVERY.

Of the cured cases one has been classed as fulminating, five as severe, three as common and three as mild. In most instances there was evidence within the first twenty-four hours of some slight improvement, but in some cases this could not be observed. In one instance in particular, Case IV, a case which had thirteen doses of serum, ten of them on successive days, there was scarcely any appreciable improvement for more than a week. In fact the patient grew worse after the treatment was begun, and six days after admission began to have convulsions, some of them very severe, coming on at intervals for about three days; the patient then went on to complete recovery. In Case XII, in which the retraction of the neck and the bowing of the back were far more marked than in any other instance, there was very little change in the condition for four days. The improvement was noticeable, however, subsequent to that time, and convalescence was rapid and without incident.

SEQUELAE.

Two of the twelve cases which recovered are totally deaf. The indications are that this deafness is due to the destruction of the auditory nerve itself, for in neither of these cases were there any symptoms of inflammatory middle ear disease at the onset of the deafness. In one of them there was some otitis media with slight discharge of pus upon puncture of the ear drum, but this was only on one side, came on about ten days after the deafness and cleared up very soon. In the other case there was no discharge whatever from the ears nor any evidence of acute inflammation of the ear itself. A third case (Case XIII) had partial deafness of the right ear with left ptosis and slight external strabismus. The ptosis and the strabismus have almost entirely disappeared, but the deafness persists. In Case III there was suppurative disease in the middle ear, but without any resultant impairment of hearing.

RELAPSES.

In only one case, Case I, was there a relapse. The patient had been ill for six days and was given serum on Jan. 8, 9 and 11, 30 ccm. at each dose. He was outside of the hospital and showed progressive improvement until Jan. 31. He had been sitting up, although he had not been out of bed. On Jan. 31 he had a chill and temperature of 104° F. Treatment was not begun again until Feb. 2. At that time the cerebrospinal fluid showed a milklike turbidity and diplococci were again present in smear and culture. He was then removed to the hospital, where he had five doses of serum. He improved again and was doing well. The temperature had reached normal and the cerebrospinal fluid was clear. Feb. 18, he had another chill, with a temperature of 103.4° F., and a lumbar puncture revealed turbid fluid with diplococci in smear and culture. He was treated continually, his temperature being very irregular and symptoms persistant. The cerebrospinal fluid, however, cleared up and remained fairly clear after four more injections. His temperature would frequently rise to 102° F. or 103° F. and did not remain at normal until March 28. His pulse was at times 180, scarcely to be counted; he had occasional convulsions. On about March 20, he began to improve and improved steadily. When he left the hospital, on June 19, there was some contracture of the left leg and almost absolute stiffness of the spine throughout its length. The patient after going home went about for a while on crutches, but when last seen was walking about without any assistance; the contracture had disappeared, the stiffness was very much less and the indications are that there will be complete recovery. The child's mental condition and all of his senses are perfectly normal.

DURATION.

The duration of the disease has been considered in the table from the day of admission until the time at which the patient was allowed to sit up out of bed. It is most difficult to settle upon any time at which the disease seems to have terminated, for usually the stiffness of the neck and Kernig's sign persist long after the temperature or any other symptoms, the latter even to some extent after the patients are allowed to walk about at the end of several weeks. The length of the febrile period, too, is hard to determine, for it is not unusual to have several days of normal temperature, then a rise of one or two degrees without any other symptoms.

THE DIAGNOSIS.

The diagnosis in this series of cases has been confirmed in every instance by a bacteriological examination. Cultures were made from the fluid obtained at the first lumbar puncture in eighteen of the nineteen cases. In one case no culture was made, but intracellular diplococci characteristic in morphology and staining properties were found in the stained smear. Of the 18 cases in which cultures were made, a positive growth was obtained upon blood serum in 15, while in the remaining 3 the diplococcus was found in the smear but failed to grow in culture.

Smears were made always from the sediment of the fluid obtained at the lumbar puncture. In 17 of the 19 cases the diplococcus was present in sufficient numbers to be found in the smear; in two cases they were not observed. In these two latter instances, however, they did grow in culture, the failure to observe them being, of course, due to the fact that not sufficient time was employed searching for them. Here might be mentioned an observation made in one of the later cases which may explain partly the failure to observe the diplococci in smears. In one instance a smear stained by Gram's method showed a very few characteristic intracellular and extracellular diplococci. This same sediment stained by Hasting's blood stain showed much more numerous diplococci both within and without the cells, and it may be that, at times in the decolorization by Gram's method, even when the Bismarck brown counterstain is used, some of the organisms are not sufficiently stained to be recognizable.

THE EFFECT OF THE INJECTION UPON THE VIABILITY OF THE DIPLOCOCCUS.

As stated above, in 15 of the 18 cases the diplococcus grew in the cultures made from the cerebrospinal fluid obtained before the injection of any serum. It was the rule to make cultures also from the fluid obtained at each subsequent lumbar puncture. Cultures from the fluid obtained at the *second* lumbar puncture after *one* dose of serum had been injected showed a growth of the diplococcus in five cases. In but three cases did there appear a growth at the *third* puncture after *two* injections of serum. One of these cases recovered, the other two died.

The diplococcus disappeared from the smears at about the same ratio as their failure to grow, having been observed in 17 of the 19 cases at the first lumbar puncture; but *five* times in the smears from the sediment of the fluid obtained after *one* injection of serum and but *once* in the smears of the sediment after *two* injections of serum.

One of the fatal cases was particularly interesting in this connection. At the original lumbar puncture the diplococci were fairly abundant in the smear and very abundant in culture. The following day, after the first dose of serum, none were found in the smear and the culture was sterile. After the second injection no organisms were seen in the smear but there appeared a single colony on the blood serum culture. After the third dose no organisms were seen but the culture showed an abundant growth of diplococci. After the fourth injection a moderate number of extracellular diplococci were found and an abundant growth of the organism in culture. This patient was treated with daily doses of 30 ccm. of serum and the treatment was begun two days after the onset. The patient died, however, the day following the last dose of serum. This is the only case in the series in which the bacteria were entirely resistant.

In the above figures the relapses of Case I are not included. In that instance the organisms grew as readily at the onset of the relapse as in the beginning of the disease.

THE EFFECT OF THE SERUM ON THE LEUCOCYTE COUNT IN THE CIRCULATING BLOOD.

In twelve cases leucocyte counts were made and in some cases numerous observations.

In a general hospital with a mixed service. where the internes are changing and where the regular hospital duties are heavy, it is indeed a difficult matter to have these counts made in such a way as to be really of great scientific value. The observations should be made by one individual at stated intervals before and after the injections and continued for some time after the serum injections are discontinued. Below is a tabulation showing the variations of the leucocyte count.

Case I. (Relapse Case.)

No observations were made on this case until he came into the hospital during his first relapse.

Leucocyte Count.

Date.			
Feb.	3	14,000	Serum given
,,	4	19,000	No serum given
,,	5	26,000	Serum given
,,	6	21,000	,, ,,
,,	7		,, ,,
,,	8	14,000	
,,	9	24,000	
,,	13	27,000	
,,	14	18,000	Temperature normal from 14th to 18th.
,,	18	37,000	Chill. Relapse. Turbid cerebrospinal fluid. Diplococci in smear and culture. Serum given.
,,	19	36,000	Serum given
,,	20	18,000	
,,	21	6,000	Serum given
,,	22		,, ,,
,,	23	13,000	,, ,,
,,	24		,, ,,
,,	26		,, ,,
,,	28		Gradual improvement. Serum given.
March	1	32,000	Convulsion. Rise of temperature. Serum given.
,,	2	20,000	Serum given
,,	3	15,000	
,,	4	12,000	Serum given
,,	5	17,000	
,,	6		Serum given
,,	8	6,000	,, ,,
,,	15		Began to improve again. Complete recovery by July.

Case II.

Leucocyte Count.

Jan.	17	26,000	Serum given
,,	20	25,000	,, ,,
,,	21	21,000	,, ,,
,,	22	22,000	,, ,,

Case IV.

Leucocyte Count.

Feb.	14	12,000	Serum given
,,	16	14,000	,, ,,
,,	17	15,000	,, ,,
,,	18	13,000	,, ,,
,,	19	10,000	,, ,,
,,	20	15,000	,, ,,
,,	21	14,000	,, ,,
,,	22		,, ,,
,,	23	23,000	,, ,,
,,	26		,, ,,
,,	27	18,000	,, ,,
,,	28		,, ,,
March	1	8,000	
,,	2		Serum given
,,	5	10,000	

Case V.

Leucocyte Count.

Feb.	20	31,000 on admission	Serum given
,,	21	16,700	,, ,,
,,	22		,, ,,
,,	23	15,000	
,,	24		Serum given
,,	26	16,000	
,,	27		Serum given
March	1	16,000	
,,	4	14,000	

Case VI.

Leucocyte Count.

March	3	13,000	Serum given
,,	4	9,000	
,,	6	7,000	Serum given
,,	8	4,000	
,,	11	6,000	Serum given

Case VII.

Leucocyte Count.

March	8	26,000	Serum given
,,	9	14,000	,, ,,
,,	11	4,000	,, ,,

Case VIII.

Leucocyte Count.

March	21	12,000	Serum given
,,	22	10,000	,, ,,
,,	23	8,000	,, ,,
April	9	9,500	Bronchopneumonia.

Case X.

Leucocyte Count.

April	19	13,000	
,,	20		Serum given
,,	21	15,000	,, ,,
,,	22		,, ,,
,,	23	24,000	,, ,,
,,	25	12,000	,, ,,
,,	27	22,000	
,,	29	9,000	
May	1	13,000	

Case XI.

Leucocyte Count.

April	30	12,000	Serum given
May	1	9,000	,, ,,
,,	2		,, ,,
,,	3	6,000	,, ,,
,,	4	11,000	,, ,,
,,	5		,, ,,
,,	6	11,000	No serum given
May	7		Serum given
,,	8	14,000	No serum given
,,	9		
,,	10		
,,	11		Died

Case XII.

Leucocyte Count.

May	8	18,700	Serum given
,,	9		,, ,,
,,	10	19,000	,, ,,
,,	11		,, ,,
,,	12	16,000	,, ,,
,,	13		,, ,,
,,	14	24,000	No serum given
,,	15		Serum given
,,	16	22,000	

Case XIV.

Leucocyte Count.

May	10	25,000	Serum given
„	11		„ „
„	12	24,000	„ „
„	13		„ „
„	14	27,000	
„	15		
„	16	22,000	

Case XVII.

Leucocyte Count.

June	8		Serum given
„	9	11,000	„ „
„	10		„ „
„	11	10,000	„ „
„	15	9,600	

The effect of the injections upon the number of leucocytes did not appear to be at all constant. In two cases there was an immediate fall from a high count to a comparatively low count; in *Case V*, from 31,000 on admission to 16,700 the following day, the white count remaining for about twelve days longer from 14,000 to 16,000; no subsequent counts were made. In the other case, *Case VII*, the count dropped from 26, 000 to 14,700 the day following the injection and to 4,000 on the fourth day. Neither of these were severe cases, one being tabulated mild, the other as one of the common type.

In three other cases there was a gradual fall. In Case VI, a chronic case, the count dropped from 13,000 to 6,000 with the injection of three doses. In Case VIII, one of the common type, the count dropped from 12,000 to 8,000 with three doses of serum. In Case XVII, a mild case, the white count was only 11,000 on admission, 9,600 three days later.

In Case IV, Case X, Case XI and Case XII, there was an increase in the white count after the treatment was begun. In Case IV, the count was 12,000 on admission and remained from 12,000 to 15,000 until nine days after, when, as the improvement became marked, the count rose to 23,000; it later was 18,000 and sixteen days after admission was 8,000. In Case X, the white count was 13,000 on admission and after four doses of serum was 24,000. In Case XII, the count was 18,700 on admission and after the seventh dose was 23,700; the patient by this time was very much improved. In the above three cases the white count was higher when improvement was beginning to be well marked than at any other time. In Case XI, the white count was 12,000 on admission with first a decrease and a subsequent increase to 14,000 after the seventh injection of serum. This was a fatal case, the patient dying about three days after the last dose. All of these cases have been classified as severe.

In Case XIV, a mild case, there was a white count of 25,000 on admission, a count of 27,000 after the fourth dose of serum and of 22,000 on the seventh day. In Case XIX, a fatal case which had several doses of serum, unfortunately there were but two white counts; one just before the injection of the third dose of serum was 8,700; the other the following day was 10,800.

In looking over these results it is quite evident that the behavior of the leucocyte count is not consistent. In such a small number of cases naturally any conclusions would be of little value. If any conclusions are to be drawn, they would seem to be as follows:

That in the milder type of case there is usually a high or moderate white count on admission and that this count is likely soon to diminish. That in the severer cases there may be a low count on admission and that this count is likely to increase with treatment and subsequently decrease as convalescence is well established. That the fatal cases have a persistently low count.

(To be continued.)

Clinical Department.

A CASE OF PYONEPHROSIS AND RENAL CALCULI IN A PREGNANT WOMAN. INDUCED LABOR, NEPHRECTOMY, RECOVERY.

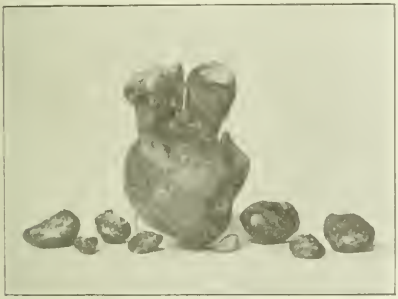
BY JOHN B. WHEELER, M.D., BURLINGTON, VT.

The patient, an American woman, thirty-seven years old, married, was admitted to the Mary Fletcher Hospital, March 3, 1904, in the middle of the fourth month of her eighth pregnancy. For the last five years she had suffered at intervals from pain in the right loin and side. On two or three occasions the pain was intense, necessitating the use of morphine hypodermics. The last of these attacks was two years ago, but since then there has been constant pain, bad enough to make the patient quite uncomfortable, though not requiring the use of anodynes. She did not feel as well as usual during the winter of 1903–1904, but nevertheless was strong and active and in fairly good flesh. Five weeks before entering the hospital she had an attack of hematuria, after which the pain was worse than before. During these five weeks she urinated five or six times every night and every two hours during the day. The urine had a specific gravity of 1,012, was acid in reaction and contained considerable pus and albumen, but no casts. Sleep was good, except for the urinary disturbance, bowels regular and appetite and digestion normal.

The patient looked vigorous and fairly well nourished. The thoracic viscera were normal. The pregnant uterus extended upward to a point half way between the umbilicus and the pubes. A firm, elastic, tender, rounded tumor extended from the right loin up under the ribs to the tip of the tenth costal cartilage, inward to within an inch of the umbilicus and downward to McBurney's point. Unfortunately it was impossible to make an x-ray examination, as the hospital apparatus happened to be out of order at that time.

As it did not seem likely that the pregnancy would run a normal course the patient was advised to have the uterus emptied as a preliminary to operating on the tumor. She decided to have this done at her home in Center Harbor, N. H., went home at once and two days later labor was brought on and the uterus emptied. A normal convalescence followed and on March 20 she was up and about. She planned to return to Burlington, March 30, for operation on the tumor, but on the 26th she began to have slight fever, with nausea and severe lumbar pain, necessitating morphine hypodermics. On the 28th she had a morning temperature of 99 and an evening temperature of 104, and on the 29th the temperature was 100 in the morning and 105 in the evening. On the 30th I went to Center Harbor and found the patient, at noon, with a temperature of 102.5 and a pulse of 115, condition otherwise pretty good, tumor extending two inches farther downward than when I last saw her.

The operation was immediately performed, with the assistance of Dr. Harriman, of Laconia; Dr. Hawkins, of Meredith, and the patient's physician, Dr. Morrill, of Center Harbor. A cut was made beginning at the junction of the tenth rib with its costal cartilage and ending two inches below McBurney's point. The tumor proved to be the enlarged right kidney. It filled the loin and extended upward under the liver, downward to the end of the incision and transversely nearly to the median line, overlying the right side of the spinal column. Some parts of it felt solid, but most of it was a multilocular sac, distended with fluid. The inferior vena cava ran over the whole length of the tumor, about half an inch from its inner border. Palpation of the left kidney showed nothing abnormal there.



The posterior peritoneum was incised external to the ascending colon and the tumor was found to be very adherent to the surrounding tissues. There was but little fatty capsule. There were two renal veins, neither more than half an inch long. Each was divided between two pairs of artery clamps, the vena cava was dissected away from the tumor, the tumor was with some difficulty dug out of its bed, the ureter and renal artery were tied with chromic catgut and the tumor was cut away. The stumps of the renal veins were then tied with chromic catgut. The appendix, which was clubbed at the tip and somewhat adherent, was removed.

The sac, which comprised nearly all the tumor, was divided into four compartments, which were distended with about a pint of purulent fluid. The pelvis of the kidney contained a large stone, shaped something like a heart, and eight smaller stones were found in other parts of the kidney. The large stone, when pretty dry, weighed 768 gr. and all the smaller ones together weighed 192 gr. The exact size of the stones is shown in the accompanying photograph.

The outcome of the case was very satisfactory, healing by first intention, normal convalescence and good health ever since. Dr. Morrill, in a letter dated Aug. 8, 1908, says that the patient is very well, has a houseful of boarders and superintends all the work. He also remarks that she has had two more children since the operation.

Although this case is not, in any single particular, a record-breaker, it presents a combination of interesting features which perhaps make it worth recording. One feature is the presence of every one of the symptoms which Morris enumerates as occurring with varying frequency in cases of renal calculus; namely, pain, pyuria, renal colic, hematuria, tumor, trouble with micturition, tenderness. The complication of pregnancy adds to the interest of the case. The size, shape and number of the stones, if not very extraordinary, is rather unusual. A feature which the operator found decidedly interesting was the necessity of dissecting several inches of the vena cava away from a sac with purulent contents. Finally, the fact that four years after the operation the patient is in good enough health to have the care of a large boarding-house and a family of nine children shows the completeness of recovery possible after a nephrectomy for pyonephrosis, if the remaining kidney is sound.

Medical Progress.

PROGRESS IN GYNECOLOGY.

BY WALTER L. BURRAGE, M.D

THE CAUSATION OF EXTRA-UTERINE PREGNANCY.

A most thorough and scholarly analysis of the present-day knowledge of the etiology of extra-uterine pregnancy is given by J. Whitridge Williams. He says: "Unfortunately concise and definite statements cannot be made concerning the etiology of the condition, but instead, a large number of explanations of greater or less plausibility have been advanced, that may be divided into two groups for more convenient consideration: (1) Conditions which interfere mechanically with the downward passage of the ovum. (2) Physical and developmental conditions which favor decidual formation in the tubes.

Under the first comes *Peritoneal adhesions*. One of the earliest explanations for the causation of extra-uterine pregnancy was sought in peritoneal adhesions, which bound down and constricted the tubal lumen. According to Hennig, Fritze, in 1779, was the first to direct attention to this condition, but the names of Virchow, Hecker and Rokitansky are usually associated with it. These authors believed that the adhesions cause the arrest of the ovum by compressing the lumen of the tube, or by interfering with its peristalsis, a view which has still some adherents and is occasionally verified at operation or autopsy.

Tubal polypi. — A considerable number of observers, among whom may be mentioned Leopold, Breslau, Beck and Wyder, have reported cases in which they believed that polypi projecting into the lumen of the tube caused the arrest of the ovum. It would appear, however, that only the cases of Beck and Wyder are at all convincing, as only in them were the polypi situated between the fetal sac and the uterus. Moreover, it is quite possible, as Ahlfeld has pointed out, that even they had nothing to do with the arrest of the ovum, but were merely secondary decidual outgrowths. De la Faille considered that a similar explanation might be invoked for one of his cases of interstitial pregnancy, as he found the proximal extremity of the tube occluded by a portion of the uterine decidua.

Tumors of the tube wall. — Petit, Dührssen and others have described myomata in the tube wall, which they believed so compressed its lumen as to interfere with the passage of the ovum; while in other instances tumors arising from surrounding organs are believed to have played a similar part.

Salpingitis. — Schroeder, in 1877, but more particularly Tait, a few years later, advanced the theory that the most frequent cause of tubal pregnancy was to be found in endosalpingitis. The authorities held that fertilization normally occurred in the uterine cavity and was facilitated by the fact that the ciliary current was directed from below upward in the uterus and from above downward in the tubes, so that the spermatozoa were readily carried upward to the fundus but were prevented from gaining access to the tubes. Accordingly, they supposed if the cilia of the tube had been destroyed as a result of salpingitis that there would no longer be any obstacle to the ascent of the spermatozoa, while at the same time the downward passage of the ovum would be rendered very difficult.

Recent work, however, has demonstrated the fallacy of these arguments. In the first place, Hofmeier and Mandl have shown that the ciliary current is directed from above downward from the fimbriated ends of the tubes to the internal os and therefore the spermatozoa are obliged to work against the current from the time they pass the cervix. More important is the fact that experiments upon animals and a few observations upon human beings show that a few hours after copulation spermatozoa can be found in the lateral portion of the tubes and even upon the surface of the ovary. Accordingly it would appear that the lateral end of the tube may be regarded as a receptaculum seminis and that conception normally occurs in that location or upon the surface of the ovary. Consequently every pregnancy is extra-uterine in its early stages, and the problem to be solved is not how the ovum and spermatozoa meet in the tube, but why the fertilized ovum usually descends into the uterus.

Tait's theory has found many adherents, but careful study of the specimens obtained at operation appears to show that it is without foundation in the majority of cases. In nearly every specimen which I have examined I have been able to demonstrate the presence of cilia in the pregnant tube, and similar observations have been made by Hofmeier and Zedel, the latter having observed them in motion in three out of the four specimens which he examined immediately after operation. This, however, does not demonstrate that salpingitis plays no part in the production of extra-uterine pregnancy.

The views of Schroeder and Tait were promptly accepted by most authorities and at the present time are still held in a modified way by many writers, among whom may be mentioned Martin, Dührssen, Fehling, Mandl and Schmidt, Ott Küstner, Petersen, Runge and others. The etiologic connection is borne out by two facts: first, that one is able to elicit a history of previous inflammatory trouble in the majority of cases, and second, that in many instances careful histologic examination reveals traces of past or present inflammation, which frequently involves both tubes.

Following the demonstration that Tait's original theory was incorrect, great difficulty was experienced in formulating a satisfactory explanation for the fact that salpingitis facilitated the occurrence of tubal pregnancy, and most writers were obliged to be content with merely demonstrating that inflammatory lesions were present in a certain percentage of their cases. Thus Ott and Petersen could elicit an inflammatory history in all their cases, Runge in most of his, while Mandl and Schmidt and Dührssen stated that 66 and 68.7% of their patients had suffered from gonorrhea. Negative evidence was offered by Ahlfeld, who believes that the infrequent occurrence of tubal pregnancy in his experience may be explained by the fact that his material comes from a country district where gonorrhea occurs but rarely.

In 1902 Opitz found definite inflammatory lesions in 15 out of 23 specimens from Olshausen's clinic and in every instance, whether such lesions were present or not, noted that the tips of many of the folds of the mucosa had become fused together, so that the microscopic sections frequently presented the cribriform appearance characteristic of follicular salpingitis. Moreover, he found similar lesions in the non-pregnant tube wherever it was available for examination.

He held that such a condition afforded a very satisfactory explanation for the arrest of the ovum, as he assumed that some of the canals inclosed between the adherent folds ended blindly at one end but communicated freely with the main lumen at the other. Accordingly, it would only be necessary for the fertilized ovum to enter one of these cul-de-sacs in order to be arrested and thus lead to the development of a tubal pregnancy. Similar observations have been made by Micholitsch and others and can be confirmed by any observer.

This explanation has been enthusiastically accepted by Werth, who considers it of almost universal application. It is interesting to note that he described a similar condition in his monograph of 1887, but did not recognize its significance. I have frequently made the same observation, and while I consider that such a condition may cause the arrest of a fertilized ovum, I am inclined to agree with Kermauner that we should hesitate before giving it a too general acceptance.

Diverticula from the lumen of the tube. — In 1891 Landau and Rheinstein and myself demonstrated the presence of epithelial canals in the muscular wall of the tube and showed by means of serial sections that one end communicated with its main lumen while the other ended blindly. We both suggested that a fertilized ovum might occasionally become arrested at the blind end of such a structure and thus give rise to a tubal pregnancy, and Landau and Rheinstein described a specimen which they believed demonstrated such a mechanism.

For some years I believed firmly in this mode of origin and thought that I had studied a number of specimens which demonstrated its correctness. These were cases of early tubal pregnancy in which the product of conception lay in the muscular wall of the tube entirely outside of its lumen. Further study, however, has led me to believe that my conclusions were erroneous and that the findings upon which they were based in reality represent the normal mode of implantation of the ovum in the tube and are entirely independent of the existence of diverticula. I do not wish to deny the possibility of the arrest of an ovum in such structures, as I believe that it occasionally occurs.

During the past few years Goebel, Opitz, Micholitsch, Fellner and others have devoted considerable attention to this subject and have shown that diverticula from the lumen of the tube are of frequent occurrence and hold that they play an important part in the etiology of tubal pregnancy. In fact, Fellner states that they are the usual cause of the condition and believes that its non-occurrence in the lower animals is to be attributed to the absence of such structures.

It is generally considered that such diverticula are congenital in origin and represent abortive attempts at the formation of accessory tubal ostia. The investigations of Hoehne, however, show that such is not always the case, as he has been able to demonstrate, in one specimen at least, that they may result from a secondary extension of the tubal epithelium into the cavities of small intramural abscesses which have ruptured into the lumen of the tube.

In exceptional instances serial sections through the tubes demonstrate the presence of abnormal lumina. These may vary from canals which extend almost its entire length and represent an abortive attempt at the formation of an accessory tube to processes of varying length which extend from the lumen of the tube and continue parallel to it for a certain distance and then either rejoin it or end blindly. I have studied one specimen in which the ovum was probably arrested in such a structure, while Henrotin and Herzog and Franqué and Garkisch have described cases in which such a mode of origin was conclusively demonstrated. Occasionally accessory tubal ostia may play a part in the etiology of the affection, and Sänger has reported a case in which the ovum gained access through such a structure to a tube whose fimbriated extremity was firmly occluded. Frequently what appears at first glance as an accessory ostium does not communicate with the lumen of the tube but merely represents a small cul-de-sac in which the fertilized ovum may occasionally be arrested, as was conclusively demonstrated by Henrotin and Herzog.

In this connection it may be interesting to refer to the cases recently reported by Hofmeier and by Potocki. The former removed the left tube, whose uterine end was the seat of a ruptured pregnancy, and six months later again operated upon the same woman for intra-abdominal hemorrhage. To his great surprise he found an early pregnancy arising distal to the ligature upon the stump of the amputated tube. In Potocki's case pregnancy followed the removal of the left tube and ovary and the excision of a myoma from the left side of the uterus. The fetal sac was attached beneath the left cornu and communicated with the uterine cavity, while the tubal stump from the previous operation was impervious. After careful study the author concluded that the ovum had become arrested, at the outer end of a fistulous tract, which had followed the removal of the myoma, and considers that the nearest approach to a similar condition was afforded by the celebrated case of Lecluyse.

Congenital narrowing of the tubal lumen. — Runge, in 1904, and Franqué and Garkisch, in 1905, invoked such a condition as an occasional etiologic factor. In Runge's case the lumen of the tube proximal to the pregnancy was reduced to one twentieth of its normal caliber.

Persistence of fetal convolutions of the tube. — Ever since Freund and Schober had demonstrated the part that persistence of the convolutions which characterize the tube in early life may play in the production of tubal diseases, a certain number of authors have held that such a condition may occasionally give rise to extra-uterine pregnancy, either by constricting the lumen of the tube or by interfering with its peristalsis. This condition has been invoked as an etiologic factor by Abel, Goebel, Kreisch and others.

Puerperal atrophy of the tube. — Dührssen pointed out that some of his cases of extra-uterine pregnancy occurred within one year or less after a normal labor and in two instances while the mother was still suckling the child. In such instances he belives that a puerperal atrophy of the muscularis of the tube had so impaired its peristalsis as to interfere with the downward propulsion of the ovum and fortifies his assertion by an illustration in which the tube presents a markedly atrophic appearance.

External migration of the ovum. — Every one who has carefully studied the anatomic conditions in a considerable number of extra-uterine specimens has noted the frequent occurrence of external migration of the ovum; that is, finding the corpus luteum in one ovary and the pregnancy in the opposite tube. I have noted it in at least one fourth of my cases, but am unable to state whether it is peculiar to tubal pregnancy, since comparatively few opportunities occur for ascertaining how frequently it occurs in normal uterine pregnancy.

Attention was first directed to this condition by Kussmaul, while Schrenck, Küstner, Kermauner and others have especially insisted upon its incidence in extra-uterine pregnancy. Moreover, Sippel has pointed out that occasionally under such circumstances the transit may be delayed so long that the ovum undergoes such development as to interfere with its passage through the narrower parts of the tube.

Hitschmann and Lindenthal, upon purely theoretic grounds, advanced a somewhat similar explanation for cases not associated with external migration.

Obstruction by twin ova. — In view of the relative frequency of combined tubal and uterine pregnancy, of which Parry collected 23 in his 500 cases of extra-uterine pregnancy, Barnes supposed that the arrest of one ovum in the tube might be attributed to the two ova mutually interfering with one another, so that one was retarded until it has become too large to pass on to the uterus.

This view, however, possesses only an historic interest, as the vast literature of recent years shows that combined pregnancy occurs far less frequently than Parry thought. Moreover, in several of the cases, which have been carefully investigated, such an explanation could not be considered for the reason that the presence of corpora lutea in each ovary indicated that the two ova had descended separate tubes.

We come now to the second division of our subject, viz.,

PHYSICAL AND DEVELOPMENTAL CONDITIONS WHICH FAVOR DECIDUAL FORMATION IN THE TUBES.

This theory owes its origin to Webster, who could not accept any of the large number of theories which had been advanced up to this time. After considering the embryology of the genital tract, and emphasizing the well-known fact that both the tubes and the uterus were originally derived from the Müllerian ducts, he stated that there was no inherent reason why an ovum should not become implanted upon the upper as well as upon the lower part of this canal. Consequently, the only explanation which he could offer for its infrequent occurrence was that the decidual reaction which occurs so promptly and decidedly in the uterus, in the presence of a fertilized ovum, is usually lacking in the tubes. Such a reaction he considered a reversion to an earlier type and, therefore, a sign of degeneracy.

This view was indorsed by a number of writers, among whom may be mentioned Pantellani, Mandl and Schmidt, Wormser and Moericke, but without anatomic data. Notwithstanding the fact that most recent investigators believe that the decidua is entirely lacking or only comparatively slightly developed in the pregnant tube, Webster still holds to this theory. In 1904, when describing an undoubted case of ovarian pregnancy, he stated that he did not believe that implantation could occur outside of the Müllerian tract; and, in order to bring his observation into harmony with such a theory, he contended that fragments of Müllerian tissue must have become incorporated into the ovary.

More or less closely connected with Webster's theory is the view advanced by Sippel, who, as stated above, noted external migration of the ovum in a considerable proportion of the cases. He believes that a certain time must elapse after fertilization before a decidual reaction can occur and that the ovum has usually reached the uterus before this happens, but that in external migration the time consumed by the ovum in making the transit through the peritoneal cavity may be sufficient to allow the tube to exhibit such a reaction.

From what has been said, it is apparent that there is no lack of theories concerning the etiology of extra-uterine pregnancy, and the question which we have to consider is which of them is correct, or whether any one is of universal application.

Theoretically it would appear that certain of the mechanical conditions mentioned above must frequently play a part in the production of the affection. On the other hand, it must be admitted that diverticula from the lumen of the tube and the so-called follicular salpingitis are frequently noted, while tubal pregnancy occurs but comparatively rarely.

The greatest blow, however, which these theories have suffered is the experimental work of Tainturier and Mandl and Schmidt. These investigators applied ligatures to various parts of the genital tract of rabbits shortly after copulation. When the ligature was applied to one uterine cornu, some distance below the tubal opening, ova developed distal to the ligature, as well as in the normal horn. Where both cornua were ligated, ova developed only distal to the ligatures; on the other hand, when the ligatures were applied to the uterine end of the tubes, extra-uterine pregnancy did not develop, although dead ova could be demonstrated in them. In a series of control experiments only one tube was ligated, when the same result was obtained on that side, while the other horn contained normal embryos.

These experiments apparently show that, in the rabbit at least, some other factor than mere mechanical interference with the downward passage of the ovum is essential to the production of tubal pregnancy, and this Mandl and Schmidt sought in a preliminary decidual reaction. The fact, however, that the recent work upon the anatomy of the pregnant tube shows that the decidual formation is never abundant and is frequently altogether absent, would militate strongly against such a view. The only positive experimental work along these lines was reported by Nuck many years ago, but it is probably open to the objection that he did not distinguish carefully between the uterine cornua and tubes in the lower animals.

The idea that the affection is a sign of degeneration or reversion, while extremely interesting and to a certain extent borne out by the facts, cannot be accepted as a universal solution for the problem, for in many instances the condition occurs in perfectly healthy women who live amongst the best surroundings. Moreover, its great rarity in the lower animals also speaks against such a view and Bland-Sutton states that in his large experience in the Zoölogical Gardens of London he has never met with tubal pregnancy in animals and believes that all such cases recorded in the literature are due to uterine rupture or to confounding the uterine cornua with the tubes.

This statement, however, appears somewhat too radical, as Waldeyer has reported an undoubted case in an ape.

In view of the considerations adduced, it is apparent that there is no universal cause for extra-uterine pregnancy. In many instances the arrest of the ovum in a crypt resulting from a follicular salpingitis, or in a diverticulum from the lumen of the tube, may afford a satisfactory explanation, though in a certain proportion of cases even the most careful history of a patient and thorough microscopic examination of the specimen will fail to reveal a tangible cause for the condition, which will then remain as great a problem to us as to our predecessors."

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Reports of Societies.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Thirtieth Annual Congress, held at Montreal, Canada, May 11-13, 1908.

(Concluded from No. 16, p. 510.)

ESSENTIALS OF SPEECH PRODUCTION.

Dr. C. Hudson Makuen, of Philadelphia, spoke of the method of voice formation and of the differences of the voices for speech and song respectively. He then took up the matter of articulation and considered the central mechanism of speech as distinguished from the peripheral mechanism. The chief receptive avenue for speech is, of course, through the hearing, but vision also plays an important part. The chief motor center is Broca's center, as it is called, at the posterior portion of the third frontal convolution, and in it are stored the memories for the varied movements used in the production of speech. Modern theories suggest that the Broca center is really sensory rather than motor, as it shares with the visual and auditory centers the function of serving as a storehouse for sensory impressions. On this theory the motor center for spoken words lies in the medulla. The order of cerebral activities in the production of speech, therefore, is first the revival of word images in the auditory center and in some cases in the visual center by means of afferent impulses from without through the special senses, or by means of impulses from the higher intellectual centers from within the brain; second, a transmission of these impulses from revived images in the auditory and visual centers through commissural fibers to the Broca center; and third, a revival of the kinesthetic word images which in turn incites to action the motor centers in the bulb. For such physiological results we must have the following conditions: first, the mechanisms must be structurally normal and free from pathologic encumbrances such as dental, alveolar and palatal irregularities, enlarged tonsils, nasal obstructions and cerebral tumors; second, the various parts of the individual mechanisms must be accurately co-ordinated; third, there must be a similar co-ordination of the mechanisms themselves; fourth, this accuracy of vocal and articulatory musculature must be largely automatic, and this in turn is brought about mainly through the psycho-physical development and training.

The two papers were discussed at considerable length and the remarks of the participants cannot be reproduced here in full.

Dr. Emil Mayer asked how early instruction in voice production might be begun.

Dr. E. Fletcher Ingals hoped that we might soon see a teacher on voice production in all our universities.

Dr. J. W. Farlow remarked that one difficulty in instructing patients in the use of the voice is that they do not hear the sound of their own voice as it appears to other people. This was easily realized by any one who spoke into the recording apparatus of a phonograph and then listened to his own voice as recorded on the cylinder. He would lay stress on the importance of careful attention to the use of the voice by children. Comic operas and stage darkies, with all their slang and loud talking, were most demoralizing to the ordinary listener and were responsible for much of the modern abominable vocal methods of every-day life.

In closing the discussion Professor Mills said that occasional joint conventions between teachers of singing and laryngologists would be of great service. The voice teachers differed much in their use of terms and much confusion was caused thereby. The influence of great teachers was after all but a tradition. He was not prepared to fully admit that the Broca center was a sensory affair. The recent experiments of Sherrington and Gruenbaum seemed to prove that all this region was motor. There was a tendency also to reconstruct the entire subject of aphasia, for it was not believed that the present system of localization was satisfactory. His ideal of a voice teacher was one who would in a large measure combine in himself the physiologist, physician, laryngologist and musician. He had found that the throats of singers were as a rule comparatively dry and believed that too much moisture was a distinct disadvantage, especially when occurring on the vocal bands. Childhood was not too early to begin correct instruction in speaking. He did not believe that the removal of the tonsils affected the pitch of the voice and in the case of a patient who might claim that it did, he would say that the patient had not learned how to sing correctly. Contrary to the view expressed by Dr. Makuen in the discussion, he must insist that the diaphragm was an inspiratory and not an expiratory muscle.

In discussing Professor Mills' paper, Dr. G. Hudson Makuen said that he always advised the removal of enlarged tonsils in singers and had never seen any bad effects follow. Children inherited bad speech tendencies, and a bad environment in this respect encouraged bad speech. He believed that the diaphragm should be confined entirely to expiration and never used for inspiration. What he meant by diaphragmatic breathing was not to use the diaphragm at all for inspiration, but to use it artistically in the production of voice.

THE MORPHOLOGY OF THE TURBINALS.

Dr. John M. Ingersoll, of Cleveland, Ohio, gave a description of the turbinal bones as occurring in fishes, loons, reptiles, panthers, apes and man, illustrating his remarks with some excellent drawings. His recapitulation was as follows: The turbinal structures of fishes except dipnoi are used only for olfaction and are simply ridges covered by olfactory mucous membrane. In reptiles, owing to the changed manner of respiration, the nasal organ functionates both in respiration and olfaction and both respiratory and olfactory turbinals are found. They are, however, quite simple structures. In birds the importance of the respiratory function increases and the respiratory turbinals show a high degree of development. The expanse of respiratory mucous membrane is very largely increased by the coiled structures of the turbinals. The olfactory turbinals are simply ridgelike structures. In microsmatic mammals all of the turbinals exhibit a very high degree of development. Their numerous fine branches and coils enormously increase the amount of mucous membrane exposed within a comparatively small space and thus increase the efficiency of the nasal organs. In apes, all of the turbinals have degenerated or reverted to some of the more primitive types. In man the turbinals are quite similar to the turbinals of the ape and are all rather simple structures. Rudiments of the fourth and fifth ethmoidal turbinals are sometimes found. The agger nasi is the rudiment of the nasal turbinal. Such rudiments are much more frequently present in the embryo than in the adult.

Dr. D. Bryson Delavan called attention to the fact that in some operations on the septum we often came in deep section on a slightly oval space which might be the remains of Jacobson's organ or of the channel leading to it. It was difficult to explain its origin and line of communication through the hard palate with the mouth.

Dr. W. E. Casselberry had never been able to find the space referred to by the previous speaker.

Dr. H. P. Mosher said that in discussing Jacobson's organ we were greatly helped by comparative anatomy. He described the appearance of this organ in the human fetus and its gradual evolution to the condition found in the adult.

HYPERTROPHIC FORM OF SYPHILIS INVOLVING THE FAUCES AND EPIGLOTTIS.

Dr. W. F. Chappell, of New York City, reported the case of a boy of fourteen years who had previously been treated in hospital for tonsil and adenoids. Some four years later he again came under observation with symptoms of snoring in sleep, guttural voice, labored breathing and dyspnea on exertion. Frequent choking and strangling spells came on though the boy seemed in perfect health. Examination showed both faucial pillars hypertrophied, and much hypertrophic tissue occupied the position of the tonsil. The uvula was much enlarged in each dimension and nearly filled the pharyngeal cavity and was probably the cause of the choking. The same condition existed in the epiglottis, which had lost its flexibility and allowed food to enter the larynx. The arytenoids shared in the general hypertrophy. No implication of other laryngeal structures could be made out. The mucosa covering all these parts was grayish, smooth and shiny. Adrenalin had no particular effect on the hypertrophied tissue. A portion of the uvula was removed with much relief to the symptoms of choking and strangling. Examination of the portion of the uvula excised suggested a diagnosis of hereditary specific infection though nothing corroborative could be obtained in the personal or family history. Under mixed treatment and later, Donovan's solution of arsenic and mercury, considerable improvement resulted, but considerable hypertrophy of the parts involved still remains. Most of the obscure cases of pharyngeal hypertrophy on record have proven to be of an amyloid nature. Such a case as the author's is certainly unique.

MEMBRANOUS TERTIARY SYPHILITIC LESIONS.

Dr. D. Braden Kyle, of Philadelphia, reported three cases resembling Vincent's angina; in all there was a membranous deposit on various areas in the throat. All the patients were males over thirty years. The membrane could be easily stripped off and left a ragged, worm-eaten surface which bled easily. There were no associated systemic symptoms at the time. The symptoms were the usual ones of irritation from an ulcerated condition in the mouth. In all there was a denial of specific disease. All sorts of remedies were applied without avail and then the iodides and finally mixed treatment but without result. The membranes continued to form and the ulcerations grew deeper. Bacteriological examination was non-decisive in one case. The two other cases revealed Vincent's spirilla but many other bacteria as well. The author finally decided that in spite of the negative results of treatment the cases were specific and that if they would enter the hospital and receive treatment by inunction and obtain the proper nourishment they would recover. His surmise proved correct, as inside of ten days the membranes began to disappear and recovery was fairly rapid. Up to the present time there has been no relapse, though there is slight scar tissue in the mouth. The author's aim in reporting these cases is, first, to note the unusual form of tertiary lesion; second, its close resemblance to Vincent's angina, and third, the importance of the therapeutic test. In the cases with Vincent's spirilla he does not believe a mixed infection was present, but that the presence of the latter organism was purely accidental. He finds but scanty reference in literature to tertiary lesions of a membranous nature.

CYSTS, ABSCESSES AND EDEMA OF THE EPIGLOTTIS.

Dr. Henry L. Swain, of New Haven, reported several such cases and discussed their pathology. In the depths of the branchial clefts in the embryo, epiblast and hypoblast are seen separated by only a network of a single layer of fibers. An inclusion cyst, such as these epiglottis cysts are, may come on one or the other side of the partition, but when in later years these cysts fill up, the swelling will be at the base of the inside or outside of the epiglottis as above indicated. Also in the region under discussion we may have dermoid cysts and supernumerary thyroid glands. The exact cause of the sudden swelling of all these structures is often obscure. They may become infected from some previous inflammation, but often their enlargement, with the usual symptoms of throat discomfort and mechanical disturbance of the parts, is the first thing noticed. The indications for treatment are plain and clear. Dr. Swain also reported three cases of what he chose to call "idiopathic" inflammatory edema of the epiglottis for lack of a more definite name. The attacks were in no way connected with previous disturbance in the throat. In one case there had been a leptothrix deposit on the tonsils which had caused considerable disturbance. In this case the trouble was supposed to have been due to a small abscess which could not be located, but which from the sudden subsidence of symptoms had evidently ruptured. In the former two instances the simplest explanation would be to assume the existence of a perichondritis which was accompanied by edema and pus formation. It may be that there was an inflammation of a small retention cyst on the epiglottis.

Dr. W. E. Casselberry said that Dr. Swain had grouped two classes of disease which had received very little attention in literature. We quite frequently meet with cysts in the region of the larynx, epiglottis, ary-epiglottic folds and the base of the tongue classified simply as "cysts," but it might well be true that branchial cysts occurred in the region of the epiglottis. As to those cases resulting from idiopathic inflammations of the epiglottis, we must remember that most conditions in this region formerly styled idiopathic were in reality infections and caused by micro-organisms. This is notable in some epidemics of diphtheria in which some cases seem to show an exudate while others show merely edema, and yet in both we find the Klebs-Lœffler bacillus.

Dr. J. E. Newcomb said that diphtheria always meant the presence of a membrane somewhere, although it might be only a small patch down in a bronchus, but the old conception of diphtheria without membrane must be given up.

Dr. Emil Mayer referred to a case of inflamed epiglottis causing obstruction for which a tracheotomy was about to be done, but under hot inhalations and adrenalin applications the swelling had subsided. Later, after the case had cleared up, it was noted that more than half of the epiglottis was gone, and his final conclusion was that the case was one of acute inflammation of that portion of the epiglottis remaining after the previous destruction.

Dr. E. Fletcher Ingals has recently cured a cyst of the ary-epiglottic fold by aspiration and injection with iodine and carbolic acid.

Dr. J. M. Ingersoll had treated two retention cysts of the epiglottis by simply cutting the tops off and there was no recurrence.

PROLONGED INTUBATION IN THE ADULT.

Dr. W. K. Simpson, of New York, reported the case of a woman who had come under observation in 1903. For five months she had been wearing a tracheotomy tube inserted on account of urgent laryngeal dyspnea. The latter had come on in connection with a severe cold, during which she had cough, hoarseness and increasing difficulty in breathing, so that tracheotomy became necessary. She greatly desired to be freed from the wearing of the tube. Examination of the larynx showed it to be practically closed, all the landmarks being obliterated. The superior portion, including the arytenoids, were incorporated in a more or less uniform bilateral mass of a rather dense character, leaving a mere slit in the center. There was no apparent loss of tissue and practically no motion of the parts. Antisyphilitic treatment was given, though the question of old specific infection was doubtful. Results were not at all definite. Finally under chloroform a medium-sized hard rubber intubation tube was passed and the tracheotomy tube withdrawn. The tube was worn well but was finally coughed out and replaced and this happened several times. Still later the tracheotomy slit was closed. In due time the intubation tube was removed having been worn over four years. At the present time the voice is in fair condition. At times the quality is excellent, but it becomes hoarse on slight cold. The laryngeal color is rather pale. Motion is somewhat restricted owing to induration about the crico-arytenoid joint, while the right side moves more freely. Right cord is fairly normal in contour, color and motion, while the left seems to have been more or less absorbed. The glottic space, though irregular, is ample for breathing. The author would lay stress on the following points: (1) The tolerance of the larynx to long-continued pressure. (2) The superiority of such pressure in causing absorption over the older methods of temporary introduction of dilating instruments. (3) The comparative comfort with which such tubes may be worn indefinitely. (4) The improved general condition of the patient while wearing an intubation tube in contrast to the debilitating influence and local annoyance of the tracheotomy canula and (5) the superiority of the hard rubber over the metal tube in the lessened formation of calcareous deposit, thus lessening the dangers of ulceration and formation of exuberant granulation tissue.

THE QUESTION OF RHEUMATISM ORIGINATING THROUGH TONSILLAR INFECTION.

Dr. Geo. B. Hope, of New York City, presented a paper with this title. He traversed the familiar paths of the discussions of the last few years on this mooted question and declared his disbelief in the theory that rheumatism gains access to the body through the tonsils. These organs do not disseminate bacterial infection to the degree commonly conceived. Bacteria are rarely allowed to pass beyond the capsule into the surrounding lymph nodes to develop active inflammatory processes. Hope believes that the theory of a tonsillar infection with reference to rheumatism rests on inference rather than on proven facts. He quotes some words from a recent article by Winters, who says that the tonsils are not the port of entry for this particular poison. Tonsillectomy for this condition is as illogical as rubbing the joints for the prevention or cure of arthritic rheumatism. Hypertrophied and indurated tonsils should be removed, it is true, but this is a matter wholly independent of their having a causative relation to rheumatism.

THE TREATMENT OF INOPERABLE TONSILLAR HYPERTROPHY BY INTERSTITIAL INJECTIONS OF SILVER NITRATE.

Dr. J. L. Goodale, of Boston, presented the results of his observations on injections of enlarged tonsils with silver nitrate. Three cases with hemophilia and tonsillar enlargement had recently come under his observation, and crypt dilatation with cheesy detritus were evidently to blame for the infectious arthritis present in all. One objection to the employment under such conditions of chromic acid or the galvano-cautery is that the diminution in the size of the tonsil is followed by irregular contraction with narrowing of the orifices of the crypts out of proportion to the diminution in the size of the lumen near its base. Such contractions may not prevent the incarceration of detritus. The author consequently employed silver nitrate solutions ranging in strength from 4 to 8%, making the injections every five to eight days. The amount of reaction has depended on the strength of the solution and has varied from slight to severe pain. Under this plan progressive diminution of the tonsils has taken place and the results have been gratifying. In one case the organs were reduced to one quarter of their former size. A blunt strong needle, such as is used by dentists for injecting gums, is the best one to use. It may be straight or curved. Dr. Goodale believes that the effect of the silver is therapeutically at least in harmony with the normal process of retrograde metamorphosis of the organ in that it is a sclerosis proceeding from the base to the periphery and leads to a symmetrical diminution in the size of the crypts. He is encouraged to give it a further trial.

HEMORRHAGE FOLLOWING QUINSY: LIGATION OF THE COMMON CAROTID ARTERY: RECOVORY: WITH A STUDY OF FIFTY-ONE CASES OF HEMORRHAGE IN CONNECTION WITH PHARYNGEAL SUPPURATIONS.

Dr. James E. Newcomb, of New York City, read a paper with this title. His patient was a man of fifty-five years seen in consultation with Dr. J. D. McBarron. He had quinsies all his life, but an immunity for the past ten years. The attack in question came on without any special features, and on the fourth day the presence of pus was evident and it seemed to be located rather far out in the soft palate. The patient's kidneys seemed to act well but there was distinct arteriosclerosis. Incision of the quinsy was followed by escape of healthy pus and almost immediate bleeding. The latter was easily checked but recurred several times and finally became so profuse and persistent that a radical measure was deemed necessary. It was impossible to locate the bleeding point and the condition of the parts involved rendered any plan of suturing out of the question. It was found that the ulcerative process had worked backward and that the soft palate had perforated. Ligation of the common carotid artery was decided on and was done by Dr. C. N. Dowd. Recovery was without incident. No disturbance of cerebration resulted.

Dr. Newcomb has found 50 additional cases reported in which hemorrhage occurred in connection with suppuration in the pharynx. Of this number 41 occurred in connection with quinsies. They may be classified as follows: (1) spontaneous opening of the abscess with immediate hemorrhage, 11, with 7 fatal and 4 recoveries; (2) spontaneous opening with secondary hemorrhage, 15, with 8 fatal and 7 recoveries; (3) opening by incision with immediate hemorrhage, 7 cases with 4 fatal and 3 recoveries; (4) opening by incision with secondary hemorrhage, 8 cases with 4 fatal and 4 recoveries. In addition there were 5 cases following retropharyngeal abscess with 2 fatal and 3 recoveries; 3 cases in connection with scarlatinal suppuration, 1 fatal and 2 recoveries, and 2 cases in connection with gangrenous tonsillitis, both fatal.

Summarizing we have 51 cases with 23 recoveries and 28 fatalities, or 54.8%. Operations have been done as follows: ligation of the common carotid, 16 times, with 11 recoveries and 5 deaths, once of external and internal carotid with recovery and once of all three vessels with recovery.

Two points were considered in detail by the author; first, that relating to the invasion of vessel walls by suppurative processes. For a long time it was not believed that such a thing happened, but now it is universally admitted. In the case of quinsies the sudden diminution of pressure of confined pus when rupture of the abscess takes place (or incision is made) on weakened arterial wall may lead to immediate rupture of the latter. In the second place we have to consider the differential diagnosis of swellings in the tonsillar region when accompanied by evidences of inflammation. We may have simple inflammation, tonsillar tumor or aneurism. The choice of operation will depend on our diagnosis. Autopsy records have shown that in the class of cases considered in this paper the internal carotid has often been involved. Ligation of the external carotid alone would not always be sufficient to check bleeding. The dangers of ligation of the common carotid are not to be overlooked and this latter point must be decided by the criteria of general surgery.

Dr. W. E. Casselberry thought that more stress should be laid on the dangers of ligation of the common carotid. It was disastrous to ligate this vessel for hemorrhage and get a paralysis of the opposite side. While the emergency named in Dr. Newcomb's paper had never occurred in his own experience, he had always thought that ligation of the external carotid would suffice as it did in tonsillar hemorrhage.

Dr. W. L. Ballenger said that he had learned by experience that in dissecting tonsils, if we avoided injuring the musculature of the pillars and of the bed of the tonsillar fossa we would not have severe hemorrhage, but if we did injure these structures, severe bleeding was apt to follow. In opening quinsies he separated the anterior pillar as if he was going to remove the tonsil, and then by pushing the pillar out of the way and separating it from the superior constrictor muscle the abscess could be located with accuracy.

Dr. J. O. Roe preferred the Hilton Fagge method of opening these abscesses with curved scissors and never used a knife.

In closing the discussion Dr. Newcomb said that the question of danger to brain integrity in ligating the common carotid was the same question no matter for what emergency this operation was done. The autopsy records in the material collected by him showed that the internal carotid was often the vessel which had been perforated. Ligation of the external carotid in such cases would be useless, and he again emphasized the fact that the conditions in a condition of suppuration and after an ordinary operation for tonsillotomy or tonsillectomy were entirely different. In one case we were working in healthy tissue notwithstanding the hemorrhagic complication; in the other we were working in tissue which had lost its vitality and to which the application of styptic measures was conditioned by this fact. In an ordinary post-tonsillotomy hemorrhage the bleeding site was often visible but this was not the case in hemorrhages in connection with pharyngeal suppurations.

At the executive sessions of the Congress the following gentlemen were admitted to membership: As Corresponding Fellow, Dr. Gustav Killian, of Freiberg, Germany, and as Active Fellows: Dr. J. F. Barnhill, of Indianapolis, Ind. Thesis, "Some Essential Principles in the Surgery of the Accessory Sinuses." Dr. B. Alexander Randall, of Philadelphia, Pa. Thesis, "Some Neglected Points in the Anatomy of the Pharynx." Dr. Harmon Smith, of New York City. Thesis, "Multiple Papilloma of the Larynx in Children." Dr. J. Gordon Wilson, Chicago, Ill. Thesis, "A Study in Variations of the Frontal Sinuses with a Note on the Topography of the Cribriform Plate."

The following officers were elected for the coming year: President, Dr. A. Coolidge, Jr., Boston, Mass.; First Vice-President, Dr. Emil Mayer, New York City; Second Vice-President, Dr. Francis R. Packard, Philadelphia, Pa.; Secretary and Treasurer, Dr. J. E. Newcomb, 118 West 69th Street, New York City; Librarian, Dr. J. H. Bryan, Washington, D. C.; Member of Council to serve for four years, Dr. H. S. Birkett, Montreal, Canada; Delegate to the Triennial Congress of 1910, Dr. W. K. Simpson, New York City; alternate, Dr. J. H. Bryan, Washington, D. C. The Congress of 1909 will be held at Boston, the date to be determined by the Council.

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Two Centenarians. — Mrs. Sally Morse, who celebrated her one hundredth birthday on Sept. 29 with a reception at that institution, died in the Methodist Episcopal Home in Brooklyn, N. Y., on Oct. 12. She was a native of Albany, but had passed nearly all her life in Brooklyn, where in former years she was well known as a sick nurse.

Mrs. Decker, of Seneca Falls, N. Y., died on Oct. 10 at the age of nearly one hundred and ten years, having been born in Manlius Center, Onondaga County, on Nov. 27, 1798. She was a daughter of Godfrey Reals, who served in the Continental Army during the Revolution. She had been married three times, and was married to her last husband, Charles Decker, a man of sixty-two, in 1900, when she was one hundred and two.

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THE EXHIBITION AT THE INTERNATIONAL CONGRESS ON TUBERCULOSIS.

In the International Congress on Tuberculosis, recently adjourned, there were two essential features, one represented by the section meetings of the second week, in which papers were presented and discussed, and the other by an exhibit which was open to the public during the entire three weeks of the Congress.

Within comparatively few years methods of teaching in universities and professional schools have undergone a radical change. The old system of teaching entirely by lectures has been largely superseded by the method of illustration, demonstration and practical work. The exhibition at the Congress was a striking example, showing how the same idea is being introduced into our large medical gatherings. As recently as January, 1904, the Maryland State Association prepared the first tuberculosis exhibit in America. Its value was immediately appreciated and in a short time there was a traveling exhibit belonging to the National Association, which was taken from city to city throughout the United States, remaining one or more weeks in a place and being visited by thousands of people daily. Since that time such exhibits have had a very important part in the education both of the public and of physicians. The exhibits of the Congress were made up from displays from many parts of the world, the entire number of exhibitors amounting in all to nearly four hundred and representing foreign countries, states, institutions, associations of various kinds and individuals. The prizes consisted of sums of money, gold and silver medals and honorable mentions. The competition in some of the classes was very keen and the work of the various sub-committees of the Board of Judges was not light. It is entirely beyond our scope to go much into detail with regard to awards, but certain of them are of particular interest. Sweden, for example, dedicated to the Congress a splendid publication describing in great detail the progress of the work as conducted by the Swedish National Anti-Tuberculosis Association, and in the awards received three gold medals and two silver medals.

In the competition for the best evidence of effective work in the prevention and relief of tuberculosis by any voluntary association since the last Congress, a prize of $1,000 was divided between the Woman's National Health Association of Ireland and the Charity Organization Society of New York City. Sweden divided second honors in this with Boston, each receiving a gold medal. In the exhibit designed to illustrate the most effective organization for the restriction of tuberculosis by any state or country, the United States was not allowed to compete. The first place in this respect was awarded to Germany. This probably did not come as a surprise to any one, for there is little doubt but that in the minds of the profession Germany is looked upon as deserving the first rank. Silver medals were given to Sweden and Great Britain.

Of the states of the United States, Maryland for years has taken a leading part in the anti-tuberculosis movement, and in the Congress she certainly stood high among the prize winners, receiving a $1,000 prize, two gold medals, three silver medals and four honorable mentions. In the matter of state laws, however, although Maryland was one of the very first to enact legislation with reference to tuberculosis, she was in this respect surpassed by Wisconsin, to whom a gold medal was awarded, Maryland being second. The three state exhibits to which prizes were awarded were those of New York, Massachusetts and Pennsylvania, the first place being given to New York. Massachusetts received in all four gold medals, five silver medals and one honorable mention, five of these going to Boston itself. The prize for the best municipal laws for the control of tuberculosis was given to New York City, the second place going to Saranac Lake and third to Chicago. An award of $1,000 was given to the famous Brompton Hospital in London as a place for advanced cases of tuberculosis, and the Brompton Hospital Sanatorium of Frimley divided the $1,000 prize with the White Haven Sanatorium of Pennsylvania for institutions caring for curable cases.

There were five $1,000 prizes offered. One of these was purely as an incentive for the improvement of sociological conditions, namely, for the best exhibit of a furnished house for a family or group of families of the working class, designed in the interest of the movement against tuberculosis. The offering of such a prize was most commendable, and it seemed quite unfortunate and rather remarkable that it called out so little competition, for there was nothing presented which was judged of sufficient merit to deserve the first prize. The reason for this may have been due to the fact that it called for an exhibit from outside the circle of those who are actually engaged in some form of work in connection with tuberculosis. Probably if it had been advertised among architects, more interest would have been aroused. The improvement of conditions for housing the laboring people is so important that one regrets that some impetus was not given to this particular phase of the work.

There were many smaller exhibits which were of great importance as well as of much interest. The accomplishments of the Emmanuel Church Tuberculosis Class attracted much attention. This display was entered in the same competition with dispensaries, and was very favorably commented upon by the judges, but it was deemed hardly a fair comparison, and in consequence it was awarded a special gold medal.

Weeks would scarcely suffice for one to familiarize himself sufficiently with all the exhibits to estimate them at their full value. For example, in the Illinois exhibit there was a chart on the wall which, by the casual observer, would have been passed without notice. It represented, however, the arduous labor of two years by Dr. Sachs in the Jewish district in Chicago, covering an area of nearly four hundred and fifty acres, and showing the location of every case of tuberculosis which had occurred during that time, the type of house in which the patient lived, and gave the percentage of cases among the Jews as compared with that of other nationalities.

One could not expect all competitors to feel that the awards were perfectly fair, because the majority of men are more or less biased in favor of the work in which they themselves are engaged or in which they have some active interest. But such an exhibit can be productive only of good. The general impression which was carried away was that there is a universal spirit of aggressiveness in this branch of medicine which cannot fail to result in important advances in our knowledge of methods for handling tuberculosis.

SKYSCRAPERS IN NEW YORK TO BE CONTROLLED.

M. Augustin Rey, the French architect, who is one of the best-known European authorities on town planning, and who won the first prize offered by Lord Rothschild in the international competition for the best set of plans for a model village, recently made an address at a meeting held under the auspices of the Committee on Congestion of Population in New York.

M. Rey is a member of the Superior Council of the Dwelling Houses of Paris and was one of the official representatives of the French government at the International Congress on Tuberculosis in Washington. In the course of his remarks he criticised New York's skyscrapers severely, and said that within twenty years the city would require even the highest to be reduced one half because the public would be aroused to the menace they brought to the community. The most pressing need of New York he considered to be the construction of better dwelling houses. There was no logic, he said, in the city authorities allowing the existence of unclean, badly ventilated, dark, overcrowed tenements and at the same time, in the same neighborhood, maintaining palatial hospitals and sanitariums to cure persons who had contracted ills from the tenement-house conditions.

The Building Code Revision Commission of the Board of Aldermen is soon to hold a public hearing on the further construction of skyscrapers in the city, when the Committee on Congestion of Population will present data going to show that these very high buildings are no longer necessary, while they constitute a menace to the health and safety of the city.

At the last meeting of the Board of Aldermen the commission reported in favor of regulating the height of building in accordance with the width of the street, as is done in all the principal cities of Europe. It was recommended that 300 feet should be the extreme limit, except in the case of buildings facing a public square, where a height of 350 might be permitted. On streets less than 45 feet wide, the limit was placed at 135 feet. It was also recommended that no fireproof building, except office buildings, observatories and grain elevators, should exceed 150 feet in height.

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MEDICAL NOTES.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Oct. 20, 1908, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 81, scarlatina 66, typhoid fever 24. measles 27, smallpox 0, tuberculosis 51.

The death-rate of the reported deaths for the week ending Oct. 20, 1908, was 20.11.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Oct. 17, 1908, was 200, against 208 the corresponding week of last year, showing a decrease of 8 deaths and making the death-rate for the week 16.85. Of this number 100 were males and 100 were females; 194 were white and 6 colored; 138 were born in the United States, 59 in foreign countries and 3 unknown; 48 were of American parentage, 116 of foreign parentage and 36 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 84 cases and 7 deaths; scarlatina, 47 cases and 0 deaths; typhoid fever, 36 cases and 2 deaths; measles, 25 cases and 2 deaths; tuberculosis, 54 cases and 18 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 18, whooping cough 1, heart disease 14, bronchitis 6 and marasmus 12. There were 9 deaths from violent causes. The number of children who died under one year was 60; the number under five years 78. The number of persons who died over sixty years of age was 37. The deaths in public institutions were 79.

Cerebrospinal meningitis, 0 cases and 1 death.

Annual Meeting and Dinner of the Massachusetts General Hospital House Pupils' Alumni Association. — The third annual meeting and dinner of the Massachusetts General Hospital House Pupils' Alumni Association was held at the Hotel Vendome Oct. 16, 1908. There were 146 members present. Among the guests of the Association present were Prof. William H. Welch and Dr. Rupert Norton, of Baltimore; Drs. Francis J. Shepherd, Alexander D. Blackader and I. A. Hutchinson, of Montreal; Dr. Henry P. Walcott, of Cambridge; Dr. John M. Peters, of Providence; Drs. Harold Williams, George B. Shattuck, Timothy J. Reardon, Mr. Elliot E. Sayward and Judge Charles T. Davis, of Boston.

The following officers were elected: President, John G. Blake, 1860, Boston; Vice-Presidents, George E. Francis, 1862, Worcester; Charles B. Porter, 1864, Boston; Burnside Foster, 1887, St. Paul, Minn.; Secretary and Treasurer, Joseph B. Howland, 1897, Boston.

NEW YORK.

A Tuberculosis Exhibit Continued. —Dr. Alfred Meyer, who organized the Bedford Sanitorium for Consumptives of the Montefiore Home, has, by his energetic efforts, secured for New York, for demonstration for a number of weeks under the auspices of the Charity Organization Society, the remarkable exhibit which was shown in connection with the recent International Congress on Tuberculosis in Washington. In order to accomplish this it was necessary to raise at least $30,000 for expenses, and within forty-eight hours more than $33,000 was insured. Mayor McClellan was heartily in favor of the project, and when, on Oct. 13, Dr. Meyer presented to the Board of Aldermen the advantages to the community of such an exhibit, an appropriation of $20,000 for the purpose was voted without a dissenting voice. Mr. Metz, controller of the city, headed the private subscription with the sum of $1,000, and subscriptions of $1,500 each were received from Henry Phipps, John S. Kennedy and the Sage Foundation. R. Fulton Cutting, Jacob H. Schiff, Alfred T. White and others contributed $500 each.

Generous Gifts. — In commemoration of his golden wedding, which was celebrated on Oct. 14, John S. Kennedy, the well-known banker and philanthropist, made the generous gift of $1,000,000 to the Presbyterian Hospital. He became a member of the finance committee of its board of managers in 1876, and ever since has been one of the institution's most liberal contributors. In his letter offering this donation it was stipulated that the money should be chiefly used for a new Administration Building, and that whatever should be left over should be employed to carry out other works of construction and reconstruction, of which the hospital has long stood in need. Seventeen years ago Mr. Kennedy gave the money for the United Charities Building, costing $6,000, on Fourth Avenue, in which the various bodies are centered under one roof. Later he presented $250,000 to the School of Philanthropy, and two years ago, $500,000 to Columbia University. These are only a few instances of his generosity, and his gifts have always been made in the most unobstrusive way.

Current Literature.

The American Journal of the Medical Sciences.

September, 1908.

1. *Müller, F. *The Relations of the Female Reproductive Organs to Internal Diseases.*
2. *Vaughan, V. C. *The Specific Treatment of Typhoid Fever.*
3. *Cohen, S. S. *Observations on the Hypodermic Use of Quinine and Urea Hydrochloride in the Diagnosis and Treatment of Acute and Chronic Malarial Infections and on the Resemblance to the Sexual Cycle of the Hemameba manifested by Periods of Freedom from Paroxysms that Ordinarily Follow a Single Injection of about One Grain of this Salt.*
4. *Da Costa, J. C., and Beardsley, E. J. G. *The Resistance of Diabetics to Bacterial Infection.*
5. *Rudolph, R. D. *The Blood Pressure in Arteriosclerosis.*
6. Bishop, L. F. *Symptoms attributed to the Myocardium in Reality Often of Peripheral Origin.*
7. *Wells, H. G. *Persistent Patency of the Ductus Arteriosus.*
8. *Elmer, W. P. *Leukanemia.*
9. *Ellis, A. G. *The Pathological Anatomy of Bronchial Asthma.*
10. Boland, F. K. *Henry Gray, Anatomist: An Appreciation.*

1. Müller urges that greater attention be paid to the borderland between gynecology and internal medicine. He discusses the general diseases connected with female sexual physiology, chlorosis, thyroid disturbances and psychic disorders at puberty; excessive vomiting, nervous diseases and cardiac disturbances in pregnancy; the condition termed "post-puerperal asthenia of young wives," and the familiar symptoms of the climacterium. He describes pathologic processes rising from diseases of the female reproductive organs in other internal organs. Disturbances of the bowels are most frequent, constipation and mucous colitis. Myoma of the uterus is often accompanied by cardiac weakness, the "myoma heart" first recognized by surgeons, as well as by hyperthyroidism. Pelvic disease frequently causes nervous disorders, not only functional, but also organic. Diseases of the urinary tract are often related to the female reproductive organs. Eclampsia, cystitis, pyelitis are illustrations. Diseases of the bile passages are also related to female reproduction. Appendicitis, sigmoiditis and perisigmoiditis may also arise from pelvic disease. Finally the relation of the genital organs to constitutional and infectious diseases is considered; chiefly the deleterious influence of pregnancy, first, in diabetes, and, second, in infectious diseases, especially tuberculosis.

2. Vaughan describes his work in extracting active substances from typhoid bacilli, and discusses the possible value of these substances in treatment of the disease. He finds in the alcoholic and ethereal extracts a poisonous substance probably not specific. The residue after the extraction, on the other hand, seems to contain a specific sensitizing substance. He concludes that although it is not probable that an antitoxin can ever be obtained comparable to that which we have for diphtheria, this "residue" may be of service especially in preventing relapses and in aborting the disease. No clinical observations are reported.

3. Cohen writes to emphasize the superiority of quinine and urea hydrochloride over other salts of quinine, and to call attention to the fact that after a single injection patients are free from paroxysms for periods of either six and a half or thirteen days, these periods corresponding respectively to the periods of cyst formation and of sporozoite development in the sexual cycle of the malarial parasite. Cases and charts are given to illustrate these observations. The diagnostic value of the results of these injections is also mentioned.

4. Da Costa and Beardsley conclude that in diabetics as a class the resisting powers of the blood against bacterial infection are conspicuously subnormal, as estimated by the opsonic index. These results apply especially to infections by streptococcus, staphylococcus and tubercle bacillus. The lowered resistance is more marked in the higher grades of diabetic glycosuria and especially in acidosis. The opsonic test is further recommended as a means of gauging in a general way the extent to which the subject's vitality has been undermined.

5. Rudolph discusses briefly the behavior of the blood pressure in arteriosclerosis. He calls attention to the fact that it is not always elevated, even in marked cases, but reports certain cases in which such elevation has occurred. The condition of the kidneys is not brought into consideration.

7. Wells's article begins with the report of a case of patent ductus arteriosus in an adult. To this is added an exhaustive discussion of the condition based upon 41 cases in the literature. The duct is often not completely closed for some weeks after birth; but beyond this, persistence of the duct is rare. Only 20 reported cases have reached maturity, although the lesion is by no means incompatible with a fair duration of life. A decided majority of the cases have occurred in females. The normal mechanism of closure and the possible etiology of persistent patency are described; also the various anatomical appearances of the condition. The symptoms of patency of the ductus arteriosus depend largely upon the degree of patency. In the great majority of cases there is no serious interference with health and activities. Some, however, have dyspnea, palpitation and other symptoms of cardiac insufficiency. In typical cases cyanosis is slight or absent. Almost always there is evidence of hypertrophy of the right ventricle; often, also, dilatation. The left ventricle may also hypertrophy. In diagnosis, Gibson describes a thrill and murmur beginning distinctly after the first sound and continuing into diastole. The second sound in the pulmonic area may be accentuated or reduplicated. The diagnosis should be possible in typical cases. It is of importance, since the prognosis is in general better than in other congenital heart lesions.

8. Elmer reports a case seeming to belong to the class of cases described by von Leube under the name of leukanemia. The clinical appearances in this condition resemble those of pernicious anemia but with a certain degree of myelocytosis.

9. Ellis analyzes in detail the pathological reports of 8 cases of bronchial asthma but concludes that the pathologic anatomy constitutes no exposition of the cause of the disease. [F. W. P.]

The Lancet.

Sept. 19, 1908.

1. Hawthorne, C. O. *The Cerebral and Ocular Complications of Anemia and the Probable Relationship of these to Thrombosis.*
2. *Leech, E. B. *The Medical Aspect of Gastro-enterostomy.*
3. Hume, G. H. *A Case of Traumatic Subdural Hematoma trephined Three Months after Injury.*
4. Johnston, T. A. *A Case of Sleeping Sickness treated with Atoxyl; Apparent Recovery.*
5. Waterhouse, R. *An Unusual Type of Leukemia complicated by Synovitis in a Youth the Subject of Ichthyosis.*
6. Yearsley, McL. *A Case of Severe Vertigo and Tinnitus; Destruction of the Labyrinth; Cure.*
7. Milton, J. P. *Two Cases of Pneumothorax.*
8. *Hewitt, F. W. *The Prevention of Deaths under Anesthetics.*
9. De Garis, M. C. *A Case of Fracture of the Ribs, Rupture of the Lung, and Pneumohemothorax, with Notes of the Post-Mortem Examination.*
10. Williams, T. A. *The Pathogenesis of Tabes Dorsalis.*
11. Joseph, F. H. *A Modification of the Romanowsky Stain.*

2. Leech discusses 128 operations of gastro-enterostomy and the results which he has obtained. Seventy-nine of these operations were for non-malignant conditions; 46 for malignant cases. He used the posterior anastomosis in 74 non-malignant and in 33 malignant cases. Of the non-malignant cases, in 47% there was complete relief, in 10% nearly complete relief, in 9% no improvement, while there was a mortality of 23%. In those cases which he classes as failures in the non-malignant group there was present persistent pain and vomiting.

Among the malignant cases, 32% lived over two months with marked relief, 22% lived over two months with no relief, while 46% died in less than two months after operation.

In the malignant cases he advises the operation of gastro-enterostomy in early cases only where there is doubt as to the malignancy. In the non-malignant cases he advises this operation only in instances where medical treatment has not been of benefit.

8. Hewitt, in discussing the prevention of deaths under anesthetics, recommends that it should be made a penal offense for any one but a legally qualified medical practitioner to administer an anesthetic; that the anesthetic departments of our hospitals should be improved by appointing experienced men of the highest professional and academic attainments to the various offices of such departments so that all anesthetics should be administered or supervised by such officers, and the subject properly taught to students. Third, he recommends that there should be a thorough course of instruction in anesthetics as a necessary part of the medical education of every legally qualified medical practitioner. Fourth, that there should be registration by all hospitals of all anesthetics administered, so that it may be possible to ascertain the death-rates of the different agents employed, and to watch the effects of any reforms that may be introduced. [J. B. H.]

British Medical Journal.

Sept. 19, 1908.

1. Robinson, H. B. *Hernia through the Semilunar Line and Direct Inguinal Hernia.*
2. Hawkins, H., and Corner, E. M. *Acute Appendicitis, with Sloughing of Abdominal Muscle and Severe Toxemia: Double Vaccine Treatment: Recovery.*
3. McCune, W. S. *Operation for Absence of the Rectum.*
4. Roper, A. C. *Perforated Gastric Ulcer: Operation Forty-four Hours after Perforation: Recovery.*
5. *Mummery, P. L., and Symes, W. L. *Points on the Experimental Production and Control of the Vascular Atony of Surgical Shock.*

Section of Obstetrics and Gynecology.

6. Herman, G. E. *Discussion on the Treatment of Uterine Displacements.*
7. *Bossi, L. M. *Influence of the Suprarenal Glands on the Bony Skeleton in Relation to Osteomalacia and Rickets.*
8. Lockyer, C. *Displacement of the Ureter in Certain Cases of Pelvic Tumors.*
9. *Jardine, R. *Cesarean Section versus Other Methods of Delivery in Contracted Pelvis.*
10. *Krönig. *Scopolamine-Morphine Narcosis in Labor.*
11. Buist, R. C. *Use of Hyoscine-Morphine Anesthesia in Natural Labor.*
12. MacNaughton-Jones, H. *Scopolamine-Morphine and Chloroform Anesthesia.*
13. Bell, W. B., and Yeoman, J. B. *Dermoid Cyst of the Jejunal Mesentery.*
14. Dempsey, A. *A Case of Missed Labor.*
15. Mangiagalli, L. *Treatment of Eclampsia by Means of Veratrum Viride.*
16. McCann, F. J. *Uterine Cancer Committee.*

Section of Psychological Medicine.

17. Shaw, T. C. *Treatment of the Habitual Drunkard (Legislative and Otherwise).*
18. Pierce, B. *Hospital Treatment in Incipient Insanity.*
19. Warner, F. *School Life from the Point of View of Psychological Medicine.*
20. Baugh, L. D. H. *Vera and Presenilis Melancholia at the Female Climacteric.*
21. Elderton, W. P. *Statistical Points in Connection with the Study of the Inheritance of Insanity.*
22. Schofield, A. T. *The Psychology of Neurasthenia and Hysteria.*
23. Bushnell, F. G. *Asylum Dysentery and Ulcerative Colitis.*

5. Mummery and Symes report the results of some experiments on the production and control of the vascular atony of surgical shock. Their experiments were performed on cats. They conclude that in fully anesthetized animals non-destructive manipulations of abdominal viscera are more productive of shock than are gross injuries. Such manipulations produce shock most rapidly when they implicate the parietal peritoneum, the peritoneal ligaments or the mesenteries. Shock is more readily produced under chloroform than under ether. In severe shock hypodermic injections are but slowly, if at all, absorbed into the blood stream. In severe shock intravenous injections of adrenin, and of extract of the posterior lobe of the pituitary body, raise arterial pressure to a

greater extent than in the normal state. A single injection of the latter influences arterial tone for upwards of an hour without producing abnormally high arterial pressure. This influence is sufficient to enable considerable recovery from shock and does not interfere with subsequent injections of adrenin if that be desirable.

7. Bossi reports a case of extreme osteomalacia with consequent marked contraction of the pelvis in which injections of 0.5 ccm. of the 1 in 1,000 solution of adrenalin caused remarkably beneficial effects in lessening the severe pain and in dilating the pelvis. In this case a perfectly normal labor resulted, whereas Cesarean section had been considered the only possible method of delivery.

9. Jardine considers Cesarean section versus other methods of delivery in contracted pelvis. He is a strong advocate of the former procedure when it can be performed under favorable conditions, but advises a very early examination in order to ascertain the presence or absence of any contraction or other abnormality of the pelvis.

10. Krönig, of Freiburg, reports his results on 1,700 cases of labor in which he has used scopolamine-morphine narcosis. He believes that the deaths caused by this method of anesthesia are entirely due to over-dosage. If care is used in regard to this, he considers that this method will be an invaluable one in relieving pain and discomfort in labor. [J. B. H.]

Deutsche Medizinische Wochenschrift. No. 37.

Sept. 10, 1908.

1. Kuhnt, H. *The Relations of the Diseases of the Nose, of its Accessory Sinuses and of the Nasopharynx to Those of the Eye.*
2. Enderlen. *A Contribution to the Ideal Operation for Arterial Aneurysm.*
3. *Lewinski, J. *The Obtainment of Pancreatic Juice from the Stomach and its Diagnostic Importance.*
4. Kempf, F. *The Secretion from Pancreatic Fistulæ, and its Treatment by Antidiabetic Diet.*
5. *Gräfenberg, E. *The Connection between Congenital Malformations and Congenital Syphilis.*
6. Friedjung, J. K. *Atypical Features of the Measles Epidemic at Vienna in 1908.*
7. Hildebrandt, W. *Artificially Produced Râles for Teaching Purposes.*
8. Bardachzi, F. *A New Orthodiagraphic Transillumination Apparatus.*
9. Davidsohn, F. *The Representation of the Heart by Means of the X-rays.*
10. Wohlgemuth, H. *Better Education in Narcosis and Anesthesia.*

3. Lewinski says that after an oil test meal trypsin is present in the gastric contents in most cases. It is necessary to neutralize the acidity immediately as otherwise the trypsin loses its power. In cases of strong acidity the spasm of the pylorus is increased and the trypsin does not enter the stomach. Hence the test meal must be one that does not contain or call forth an excess of acid.

The absence of trypsin in the gastric contents after an appropriate test meal suggests a lack of pancreatic secretion, mechanical hindrance at the pylorus to fluids entering the stomach or an hour-glass stomach.

In order to rule out the possibility of the ferment of the saliva being mistaken for trypsin, only the clear filtrate of the contents is used. The proteolytic enzyme of the saliva is closely bound up with the cells and does not enter the filtrate.

5. Gräfenberg considers that demonstration of the spirocheta pallida as the cause of syphilis has enabled us to prove that congenital malformations are not dependent upon syphilis. In some cases of hydrocephalus and ascites, spirochete have been found in the tissues responsible for the condition. However, not all cases of congenital hydrocephalus and ascites are due to syphilis. In examination of tissues in other malformations no spirochete were found. [C. F., Jr.]

Archiv für Klinische Chirurgie. Bd. 85.

Heft. 4.

1. Wullstein. *A Modification of Suprapubic Cystotomy.*
2. *Schönwerth, A. *Subcutaneous Extraperitoneal Rupture of the Bladder.*
3. *Koerber, E. *Extirpation of the Scapula for Acute Osteomyelitis.*
4. Stieda, A. *The Pathology of the Bursa of the Shoulder-Joint.*
5. Klemm, P. *The Rôle of Fecal Concretions in the Causation and Course of Acute Appendicitis.*
6. Eyler. *The Treatment of Fractures by Leather Extension Apparatus.*
7. Miyata, T. *An Experience with a Case of Complete Scalping.*
8. Bogoljuboff, W. L. *Ligation of the Intestine.*
9. *Lerda, G. *The Prophylaxis of Surgical Infections by Preventive Immunization.*
10. Hagen-Torn, J. *Renal Tumors and Retroperitoneal Growths.*
11. Kopyloff, N W. *The Treatment of Undescended Testicle.*
12. Protopopow, F. *Post-Operative Pneumonia.*

2. Schönwerth reports a case of extra-peritoneal rupture of the bladder in a man thirty years old, who had fallen out of a window. The prominent symptoms and signs were pain in the region of the bladder with retention of urine, bloody urine withdrawn by catheter, circumscribed swelling above the pubes, which was dull on percussion, while signs of peritonitis were absent. The treatment was incision and drainage of the prevesical space combined with the use of an in-lying catheter. Death followed as a result of general septic absorption, due to extravasation of urine about the neck of the bladder. The writer, therefore, advocates, in cases where such a complication may arise, an exposure of the base of the bladder through the perineum.

3. Koerber describes his experience in the case of a twelve-year-old boy whose scapula he completely removed for acute osteomyelitis. The tip of the acromion and the cartilaginous rim of the glenoid fossa were not removed, thus preserving the integrity of the shoulder-joint. Total removal of this bone has no mortality, and in these severe cases is accompanied by excellent functional results. In the instance here reported, the bone was regenerated almost completely at the end of about ten months. The after-treatment consisted of care of the shoulder musculature and the use of a triangular apparatus in the axilla, by means of which the position of the arm could be changed frequently.

5. Klemm finds that although the presence of concretions in the appendix causes no anatomical change, it does, however, retain the secretions of the glands when the mucous membrane is swollen. Therefore inflammatory conditions in the appendix are more apt to go on to gangrene and perforation in the presence of concretions, than when these are absent.

9. Lerda finds that it is possible to induce a considerable degree of immunity in guinea pigs and rabbits by the injection of mixtures of sterile cultures of all sorts of staphylococci and streptococci. This immunity is a polyvalent one, i. e., it applies to all the pus-producing organisms. The process of injection does not cause any great disturbance in the human being other than is caused by the injection of vaccine of any sort. Such injections cause a marked increase in leucocytosis and clinically are of considerable prophylactic value. The time necessary in order to acquire active immunity is eight to twelve days, so that this is of but little aid in the treatment of traumatic sepsis. [W. C. Q.]

Münchener Medizinische Wochenschrift. No. 38.

Sept. 22, 1908.

1. Aschaffenburg, G. *Old Age in its Forensic Relation.*
2. *Siegert, F. *Nervousness and Nutrition in Childhood.*
3. *Fischer, B. *Primary Tuberculosis of the Intestine in Adults.*
4. *Krajca, C. *The Treatment of Granulating Surfaces with Scharlach-R Salve.*
5. Hopmann. *The Fear of Tonsil Operations.*
6. Berlin. *The Treatment of Diphtheria in Accordance with the Experiments made in the Augusta City Hospital at Cologne during the Years 1900–1908.*
7 Liebermeister, G. *Meningococcus Septicemia.*
8. Bungart, T. *Relapses in Croupous Pneumonia.*

9. Mosbacher, E. *Irritative Disturbances of the Heart.*
10. Müller, C. *Congenital Syphilis and Progressive Paralysis.*
11. Bleibtreu, L. *The Dangers of the Use of So-Called Acetic Essence. (Eighty Per Cent Wood Acetic Acid.)*
12. Czaplewski, E. *A New Type of Portable Shack for Infectious Disease.*
13. Rovsing, T. *The Certainty of Histologic Diagnosis of Tumors as Basis for Radical Surgical Procedures.*
14. v. Tabora, D. *The Atropin Treatment of Gastric Ulcer.*
15. Tarbau, K., and Baer, G. *The Practical Significance of the Opsonic Index in Tuberculosis.*
16. Heim, L. *Cyto-Sero-Prophylaxis and Pneumonia Infection.*

2. Siegirt has had experience with some 60 children, 5 of whose histories are cited, who developed malnutrition and constipation, accompanied by great nervousness and irritability. In all these cases the child was on a "strengthening diet" very rich in proteid, or proteid and fat, with very little, if any, carbohydrate or fresh vegetables. On removing the proteid and fat from the diet, and substituting fresh vegetables, fruit and other carbohydrate food, the nutrition immediately improved and the irritability soon disappeared. It is to be noted that in these cases there was no hereditary nervousness. This class of cases, the author thinks, has not so far received enough attention from the profession at large.

3. The author reports 3 cases of primary intestinal tuberculosis in adults, the first in an old man dying from septic infection, who showed a primary non-ulcerative tuberculous lesion in the gut, without signs of tuberculosis elsewhere. The other two were cases of general miliary tuberculosis, arising from old advanced tuberculous infections in the gut. The 3 cases are reported on account of the rarity of the disease. Secondary infection from lung or elsewhere could be positively ruled out.

4. Following Fischer's work on the stimulating effect of Scharlach-R on epithelial growth, Krajca has demonstrated that an 8% ointment of Scharlach-R is of great benefit in the treatment of granulating surfaces. The epithelial growth is extremely rapid and permanent, more so than with any other preparation. A further report of the work is to follow shortly. [R. D.]

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Correspondence.

LETTER FROM CHICAGO.

"Mr. Dooley" on Psychotherapeutics.

Chicago, Oct. 16, 1908.

Mr. Editor: "Have ye read of this new thing they call sycotherapewticks that's privalint in Boston?" asked Mr. Dooley, as he laid aside the daily paper and turned to Mr. Hennessy.

"No. Is it ketchin'?" demanded Hennessy anxiously.

"Sure it's not a disa-ase at all, at all," replied Mr. Dooley in his most professorial manner. "It's a new rimidy."

"Glory be!" exclaimed Mr. Hennessy. "Is it ha-ard ter swally?"

"Faith it isn't like Father John's midicine or anny iv thim things," went on Mr. Dooley. "It's this way: Boston is a sthate iv moind, an' whin anny wan sickens there it's th' moind that gits attintion. F'r insthance, whin little Indicutt begins ter pine away an' th' nose-piece iv his specs has ter be thrimmed with fur ter keep th' metal fr'm pressin' on his poor little brain, an' he spinds his nights huntin' th' snark an' ither mana-a-tein' game in th' heart iv darkest A-africa with Teddy Rosenfelt, thin he's ripe fer sycotherapewticks."

"It's like catsher ile, thin," ventured Mr. Hennessy.

"Ye talk like an omadhaun!" snapped Mr. Dooley, impatiently. "It's nawthin' iv th' kind. No, they call in th' pasther iv th' church. 'Ah, me little man, it's obsissed ye are,' sez he. 'It's a bad case iv th' dissoshiashun iv th' persona-ality ye have,' sez he, an' be a quick pass iv th' hand he lands little Indicutt inter a sthate iv hipno-osis which is th' thrade name f'r a kind iv near-slape. In this condition the poor little divil is complately at th' good man's mercy, an' th' secret wurrukin' iv his moind is as clear ter th' pasther as th' spring waters ye see advertised in th' magazines — if ye believe th' advertoisements. In less time than it takes ye ter impty a can iv beer, Hinnissy, th' boy's moind is spiritooly dhryclinsed iv its obsissions and th' boy comes back ter airth or as near there as they iver get in Boston. 'Lave him take an exthry coorse in thransindintal ferlosofy,' says th' good man in partin' fr'm th' overjiyed parents. 'It'll kape his attintion off iv himsilf. But be careful how ye expose him ter th' frish air.'"

"It bates th' divil what leps science is makin'!" exclaimed Hennessy when his powers of speech returned.

"An' they threat th' grown-ups th' silf-same way," went on Mr. Dooley, full of his subject and unmindful of his friend's comment. "Whin wurruk is slac' at th' foundhry and th' father iv th' fam'ly doesn't know where th' price iv th' next pot iv baked beans is comin' fr'm, ter say nawthin' iv th' rint an' th' other lux'ries iv life, he begins ter recognize th' simtims iv a refracthry subconshus — such as cowld feet, an' an inability ter look th' landlord an' th' bo-otcher straight in th' face — an' drops in ter th' sychotherapewtick clinic fer afthernoon tea and ither threatmint."

"An' how does that hilp him on th' rint an' th' bo-otcher question?" asked Mr. Hennessy critically.

"That's simple," replied Mr. Dooley. "He goes away full of tea, angel cake an' be-yewtiful sintimints that inable him ter rise above his throubles, and whin th' graspin' landlord an' th' bo-otcher with th' Armour-clad hea-art begin ter do sintry duty before his dhoor in comp'ny with th' ither wolves, th' poor man retires inter th' subcellar iv conshusniss an' puts up th' amnashia shutters, which is a sure protecshun again painful mimries."

"Wunderful! wunderful!" ejaculated Mr. Hennessy.

"Th' same threatmint applies ter all th' ither human ills," continued Mr. Dooley. "If th' hea-art gets inter a frolicksome mood an' takes ter skippin' beats up an' down th' spine; if th' stummick contrac's th' playful habit iv telescopin' itsilf inter th' dhudeenum; if th' rest iv th' organs refuse ter wurruk undher union rhules, it's sycotherapewticks that's needed."

"But what does sycotherapewticks ra-ally mane?" asked Hennessy with a dazed expression.

"That's what no wan seems ter clearly undherstan'," replied Mr. Dooley. "As near as I can make out, it's a spacies iv spiritool flim-flam. We are all born in orig'nal sin, Hinnissy, and th' divil's in iv'ry wan iv us. Ye may think ter dhrive him out be baptism, but don't fool yersilf. He's still with ye in as manny dif'r'nt forms as ye have fingers an' toes. That's why ye suffer fr'm a mooltiplica-ation iv th' persona-ality. Whin th' ould boy gets inter yer liver, ye're wan feller, an' whin he sthrikes yer big toe in th' shape iv th' gout ye're another. Ye know yersilf, Hinnissy, that whin ye go home an' swear at th' ould woman an' caress th' childer with th' wooden ind iv th' broom, ye're not th' same ja-anial spirit ye are whin ye're standin' up ter th' bar an' somewan else is orderin'. It's th' divil that's at th' bottom iv all our sufferin', an' it takes th' pasther and his sycotherapewticks ter dhrive him out."

"An' are there no more reg'lar docthers in Boston like ould Doc Sullivan here?" asked Hennessy.

"Very few, I hear," replied Mr. Dooley. "Them as haven't made their forchun be thrimmin' off the appendix are now sellin' fairy stories written be spiritool sycollargists."

"But even sthill I don't clearly understhan' th' meanin' iv sycotherapewticks," protested Hennessy.

"That's just the *crooks* iv the situashun, as they say in argymints. Ye are in the same box as th' pasthers, Hinnissy."

"An' ye say that Boston is on'y a sthate iv moind?" queried Mr. Hennessy.

"I do," affirmed Mr. Dooley.

"Thin it must be an awful bad sthate ter be in," finished Hennessy, sententiously.

Very throoly yours,

J. W. C.

(With humble apologies to Mr. F. P. Dunne.)

RECORD OF MORTALITY

For the Week ending Saturday, Oct. 10, 1908.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	—	—
Chicago	503	171	Waltham	2	—
Philadelphia	—	—	Pittsfield	6	2
St. Louis	—	—	Gloucester	3	2
Baltimore	152	40	Brookline	8	—
Cleveland	—	—	North Adams	5	1
Buffalo	—	—	Chicopee	6	2
Pittsburg	—	—	Northampton	7	1
Cincinnati	—	—	Medford	6	2
Milwaukee	—	—	Beverly	5	2
Washington	—	—	Leominster	—	—
Providence	—	—	Hyde Park	2	1
Boston	216	71	Melrose	1	0
Worcester	43	18	Newburyport	—	—
Fall River	39	23	Woburn	1	0
Cambridge	23	12	Westfield	4	2
Lowell	50	23	Marlboro	2	0
Lynn	13	3	Revere	4	1
New Bedford	33	12	Attleboro	2	1
Springfield	18	3	Peabody	—	—
Lawrence	27	16	Adams	0	—
Somerville	17	8	Clinton	2	2
Brockton	8	4	Gardner	2	2
Holyoke	7	3	Milford	3	3
Malden	9	2	Watertown	4	2
Chelsea	12	2	Plymouth	—	—
Newton	11	1	Weymouth	1	0
Salem	12	4	Framingham	3	1
Haverhill	8	—	Southbridge	2	1
Fitchburg	9	4	Wakefield	—	—
Everett	9	2	Webster	—	—
Taunton	10	4	Arlington	1	—

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING OCT. 17, 1908.

Bishop, L. W., passed assistant surgeon. Detached from the Naval Hospital, New York, N. Y., and ordered to the Naval Recruiting Station, Omaha, Neb. Oct. 9, 1908.

Shipp, E. M., surgeon. Detached from the "Pennsylvania," Oct. 28, and ordered home to wait orders. Oct. 10, 1908.

Evans, S. G., surgeon. Detached from the Naval Hospital, Washington, D. C., Oct. 17, and ordered to the "Pennsylvania," Oct. 28, 1908. Oct. 10, 1908.

Rose, M. E., assistant surgeon. Detached from the Naval Recruiting Station, Omaha, Neb., and ordered to the "Hist." Oct. 10, 1908.

Gatewood, J. D., medical inspector. Commissioned medical inspector from Sept. 18, 1908. Oct. 12, 1908.

Dessez, P. T., passed assistant surgeon. Detached from duty at the Naval Hospital, Las Animas, Colo., and ordered to to the "South Dakota," Oct. 15, 1908. Oct. 14, 1908.

Diehl, O., medical inspector. Commissioned medical inspector from Oct. 11, 1908. Oct. 15, 1908.

Sinclair, J. A. B., Whitmore, G. B., Cuthbertson, R., Noble, D. H., assistant surgeons. Appointed assistant surgeons from Oct. 12, 1908. Oct. 15, 1908.

Lowndes, C. H. T., surgeon. Detached from the "South Dakota," and ordered home to wait orders. Oct. 13, 1908.

APPOINTMENT.

At the meeting of the Board of Directors of the New York Post-Graduate Medical School and Hospital, held Oct. 7, Dr. John F. Erdmann was appointed Professor of Surgery for the ensuing year.

SOCIETY NOTICE.

Woman's State Medical Society of Massachusetts. — The regular meeting of the Woman's State Medical Society of Massachusetts was held in Boston at Hotel Thorndike on Thursday evening, Oct. 8, 1908. Three new members were admitted.

The meeting was held under the direction of the Committee on Public Health, the subject being "Some Public Health Problems" with special consideration of the suppression of unnecessary noise.

It was voted that the Society be represented by the chairman on Legislation at the public hearing of the proposed bill at the State House next winter.

The next meeting of the Society will be held at the above place on the evening of Jan. 9, 1909.

Isabelle D. Kerr, M.D., *Secretary.*

RECENT DEATHS.

Thomas Haven Dearing, M.D., M.M.S.S., died in Braintree, Oct. 15, 1908, aged eighty-three years.

Dr. Herbert Russell, of New York City, died on Oct. 14, at the age of thirty-seven years. He was born at Shelburne Falls, Mass., and was a graduate of Amherst College. He received the degree of M.D. from the Long Island College Hospital in 1896.

Dr. Charles Franklin Rand, of New York, who had been in ill-health for two years, died in Washington, D. C., on Oct. 13, at the age of sixty-seven years. He was a veteran of the Civil War, and was said to have been the first volunteer to respond to President Lincoln's first call for troops.

Dr. George A. Elliott, a prominent physician of the Borough of the Bronx, New York City, died on Oct. 15, at Glen Cove, L. I., where he had gone for his health. He was forty-one years of age and was graduated from the medical department of the University of New York in 1892. For a number of years he served as diagnostician in the New York City Health Department, and at the time of his death he was one of the visiting physicians to the Fordham Hospital.

Dr. John E. West, of Jersey City, N. J., died on Oct. 14, at the age of sixty-five years. He was graduated from the Ohio Medical College in 1867, and passed the first part of his professional life at St. Clairsville, Ohio. In the Civil War he served as a surgeon in the Federal Army. For the last twenty-five years he had practiced in Jersey City. He was well known in medical circles throughout Northern New Jersey, and for several years was President of the Hudson County Board of Health.

Dr. Alexander Wilder, a retired physician of Newark, N. J., who was graduated from the Syracuse University College of Medicine in 1851, died on Oct. 11. Dr. Wilder left a most extraordinary will, one of the clauses of it being as follows: "Being convinced, even to actual knowledge, that vaccination, as the operation is termed, is utterly useless, unscientific and culpable, and its enforcement oppressive and absolutely unjustifiable and an offense, disseminating disease and sometimes producing death, I direct that $100 be set aside for the use of some society in combating the practice." Dr. Wilder ordered that his body should be cremated but that his brain should be sent to Prof. Burt G. Wilder, who was a distant relative, for his collection at Cornell University. The executors decided, however, not to carry out this last provision, as no word was received from Professor Wilder, who six years ago had requested the bequest of the brain.

BOOKS AND PAMPHLETS RECEIVED.

A Manual of Bacteriology. By Herbert U. Williams, M.D. Revised by B. Meade Bolton, M.D. Fifth edition, revised and enlarged. Illustrated. Philadepbia: P. Blakiston's Son & Co. 1909.

A Laboratory Guide for Histology. By Irving Hardesty, A.B., Ph.D. With a chapter on Laboratory Drawing by Adelebert Watts Lee, M.D. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1908.

The Clinical Significance of Uterine Deviation. By Lucy Waite, B.A., M.D. Reprint.

General Surgery. By Ehrich Lexer, M.D. American edition edited by Arthur Dean Bevan, M.D. An authorized translation of the second German edition by Dean Lewis, M.D. Illustrated. New York and London: D. Appleton & Co. 1908.

Anatomy, Descriptive and Surgical. By Henry Gray, F.R.S. Seventeenth edition, thoroughly revised and re-edited with additions by Edward Anthono Spitzka, M.D. Illustrated. Philadelphia and New York: Lea and Febiger. 1908.

Fourth Annual Report of the Henry Phipps Institute for the Study, Treatment and Prevention of Tuberculosis. Feb. 1, 1906, to Feb. 1, 1907.

On the Character of the State Board Examinations and the Competency of State Medical Examining Boards. By Willis G. Tucker, M.D.

The Diagnosis and Treatment of Rheumatism and Allied Affections. By Albert C. Geyser, M.D. Reprint.

Treasury Department. Hygienic Laboratory. Bulletin No. 45. Further Studies upon Anaphylaxis. By M. J. Rosenau and John F. Anderson. Washington, 1908.

Third Annual Report of the Associated Committee of the Massachusetts Medical Society for the Prevention and Control of Tuberculosis. July, 1908.

The Vaccination of Cattle against Tuberculosis. Reprint.

Original Articles.

FRACTURES OF THE OS CALCIS.

BY FREDERIC J COTTON, M.D.,
First Assistant Visiting Surgeon, Boston City Hospital; Assistant Professor of Clinical Surgery, Tufts College Medical School
AND
LOUIS T. WILSON, M.D.,
Third Assistant Visiting Surgeon, Boston City Hospital.

PRELIMINARY PAPER.

Our attention was first called to fractures of the os calcis by the frequency of permanent disability, or of disability that threatened to be permanent, in cases which were seen in the surgical out-patient department of the City Hospital. It was only after seeing a considerable number of these cases that it occurred to us to observe them especially, or to treat them in any other than the routine way, which is to accept the result as inevitable. All the teachings of school and hospital, and all the data of the literature, warn us that we should be very careful to treat fractures of the os calcis by fixation and by putting them up in plantar flexion, so as to decrease the tension through the tendo achillis, which may contribute to further displacement of the fractured heel. Considering that further displacement of the fractured heel is impossible in the average fracture of this sort, at least unless the impaction has previously been reduced, this advice is about as practical as much that stands in the textbooks.

Such treatment of fractures of the os calcis is perfectly respectable doctrine for a date ten or fifteen years ago, but is not, as we shall attempt to show, what should be expected to-day.

There are, in the recent literature, several articles that seem to show an understanding of the lesions and the relative frequency and severity of these cases. All the articles are admirable in their way.[1]

Exhaustive as these articles are, none of them have anything to offer in regard to what seem to us the really important points, — the recognition and proper treatment of *fresh* cases. Treatment of deformity already produced by neglect does great good, but does not justify the neglect.

Up to the time when good x-rays could be obtained, there was no definite way of estimating the extent of the lesion in these cases, and in many cases it was apparently impossible even to make a diagnosis with accuracy. The general assumption in these cases was that there was a breaking across of the os calcis. It was known that complicated crushing of the os calcis might, in fact, occur, and this was shown in museum specimens, but that such was the condition in the average case seems never to have been assumed. In this, as in other fracture findings, museum specimens were discounted on the assumption that *all* the lesions in a case of fatal injury were more severe than in cases ordinarily met with that recovered. This is an obvious fallacy and, even without the evidence of the x-ray, it is fair to assume that the usual cause of fractures of the tarsus (namely, falls of twenty feet or over, in which the weight is received on the heels) is sufficient to furnish adequate violence for any lesion, and we should expect *a priori* very severe lesions in the ordinary cases. That is, in fact, the case, and it is our belief that the lesions in all these cases are nearly alike, varying mainly in the extent and direction of the displacement of the confused fragments.

The lesion is a crushing lesion; it results, as we have said, from falls on the feet. Fractures of the bone from other causes, particularly from muscular tension through the tendo achillis from action of the calf muscles, have frequently been reported but are really only the picturesque exception. We have never seen such a case and know of but one occurring in this vicinity. This is the case at the Massachusetts General Hospital, from the skiagraph of which one of us made a tracing for the Scudder book on fractures.[2] There are two cases of which we have knowledge in which the fracture of the os calcis was the result of *lateral* crushing from a lateral blow. All other cases in our series of nearly a hundred, as in the similar series of Cabot and Binney just published, seem to have been the direct result of *vertical* crushing force. For our present purposes, then, we will consider only the type of *fracture of the os calcis by crushing.*

Before considering the lesions in detail, we will speak of results, for our inquiry has been, as it logically should be, in the line of ascertaining the proximate reason of bad results. Deductive reasoning from lesions amounts to nothing. What we really want to know in regard to the result of this or any other fracture that can be called approximately a type, is:

A. The results as to function.

B. Where there is loss of function, the proximate causes of such loss, whether from deformity, limitation of motion, weakness or what not.

C. How do the cases that result badly differ from the more fortunate ones, in lesion or in treatment?

D. What can be done to *avoid* bad results?

E. What, if anything, can be done to *remedy* bad results when they have occurred?

A.

We have done a great deal of work in the last five years trying to answer these questions and we believe that we can answer them, but regret our inability to give a statistical answer of any value to question *A*, owing to the difficulty in tracing cases. These cases are usually men in the prime of life, who, as a result of their occupation as construction artisans, roofers, painters, longshoremen, etc., have been injured at their work. Men of this sort, if they recover from injuries, usually return to work and can be traced through their unions, etc. In this series such tracing was almost always without result.

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[1] Carless and Mayou: London Practitioner, December, 1902.
Blau: Deut. Zeit. für Chir., 1904, lxxii, p. 445.
Schultz: Wien. Klin. Wocbenschr., 1906, xix, p. 90.
J. Hutchinson, Jr.: Transactions, Clinical Society, London, 1905, xxxviii, p. 159.
Cabot and Binney: Ann. of Surg., January, 1907.

[2] This is, apparently, the same case and the same plate appearing in the recent article of Cabot and Binney.

We are convinced that a very large percentage of cases of this sort result in permanent disability sufficient at least to prevent resumption of the man's ordinary work. We believe that the end-results we have been able to study probably represent somewhere near the average of cases and that they certainly do not present a view more pessimistic than the facts. This we mention at some length because our impression in the matter is somewhat at variance with that expressed in the admirable paper lately published by Cabot and Binney.

We believe the results detailed and implied in their article are much too favorable. So far as we can estimate from our own observations, reliable for end-results in 22 cases and covering a total of over 90 cases, we should estimate the proportion suffering from considerable permanent disability as certainly a good deal over one half of the total number.

B.

CAUSES OF DISABILITY.

In studying the disabled cases we have found the following conditions of importance:

1. Raising of the heel.
2. Shortening of the heel.
3. Outward deviation of the heel.
4. Flattening of the arch.
5. Projection of fragments into the sole of the foot.
6. Loss of motion between the astragalus and the os calcis.
7. Mechanical interference between os calcis and external malleolus.

1. *Raising of the heel* produces a shortening, ordinarily of no great consequence. If the heel is simply driven upward, it produces no *flattening* of the arch; it simply raises, so to speak, one of the abutments of the arch. It does, however, bring the top of the arch close to the ground and may, in a foot originally having a low arch, cause some pressure of the soft tissues, including the nerves, between the bony arch and the sole of the boot. Extreme displacement may, of course, entirely destroy the arch. This condition we have seen in three cases in which relief was possible only with an artificial pad *under the heel* which relieved symptoms and confirmed the diagnosis as to the cause of this pressure pain.

2. *Shortening of the heel per se*, that is, simple approximation of the insertion of the tendo achillis to the ankle joint, has no ill effect excepting in so far as it shortens the lever arm on which the calf muscles act. This shortening must obviously occur, but the proof of any severe disability from this cause is lacking so far as our direct evidence goes. Some loss of power is present in all cases of this fracture, but apparently not in direct proportion to this shortening.

3. *Outward deviation of the heel.* — If the heel is driven outward as well as upward, the whole base of support of the foot is entirely shifted and the occurrence of flatfoot from strain alone is as nearly inevitable as in a case of Pott's fracture with uncorrected outward displacement. In one case observed by us this was the essential cause of a practically total disability. In several other cases it was a part cause.

4. *Flattening of the arch.*— Flattening of the arch in the sense of a simple pes valgus, dependent on weakness alone or as a result of weakness plus the strain of accommodation to loss of motion in the ankle, may occur in these cases exactly as it occurs in Pott's fractures or in fractures higher up in the leg, entirely independent of displacement in any direction and entirely independent of the exact type of the original lesion.

The distinction between these cases and the flattened foot belonging to Classes 1 and 3 is practical as well as definite. Cases of this type, 4, can be treated and relieved, like an ordinary pes valgus, with plates. Classes 1 and 3 are respectively made worse or are unaffected by plates.

5. *Projection of fragments into the sole.* (See Fig. 3.)—As a result of extreme tilting of the posterior fragment, or of a particularly sharp point on said fragment, or of an excessive callus formation there abouts, we may have a bony projection into the soft tissues of the sole of the foot. This acts exactly as does a like projection from whatever cause that pushes down into the sole, pressed down by the body weight. This was the main cause of disability in two of our cases; in one of these it was removed by operation.

In one case it seemed that a rotatory displacement of the os calcis which brought the weight on one instead of both tuberosities was the cause of the great soreness in the sole.

6. *Loss of motion between the astragalus and os calcis.*— This proved to be a very variable but a very serious item in causing loss of function. It is a known fact that the rotary motion by which the foot adapts itself to inequalities of the ground is a rotation of the foot as a whole underneath the astragalus.[3] We also know that loss of this motion in this case mainly from adhesions, etc., is a very serious factor in the disability often following fractures at or above the ankle.[4] [5] It is, in fact, a distinctly more serious disability than limitation of the hinge motion at the ankle-joint itself. In examining these fractures of the os calcis we found this limitation of motion present not only in old cases but in other cases in which the injury was seen immediately or within less than a week, cases which, therefore, could not have suffered from long fixation. Moreover, in old cases showing such limitation of motion, it is not associated with any limitation whatever in the vertical motions at the ankle-joint. It occurs in some cases to marked degree; in others not at all. In one patient with double fracture there was before operation an *absolute* loss of lateral motion on one side, no such loss whatever in the other foot. Early in our observations it became clear that this limitation of lateral rotation was a very

[3] R. W. Lovett and F. J. Cotton: Trans. Am. Orth. Asso., 1898, vol. xi, p. 298; and Boston Med. and Surg. Jour., 1898, cxxxix, p. 101.

[4] F. J. Cotton: Boston Med. and Surg. Jour., 1905, cliii, p. 106.

[5] Cotton: *Ibid.*, p. 263, and "Medical Communications," Massachusetts Medical Society, 1905.

important point in determining disability, but it was only after some study of the x-rays that we discovered the reason, namely, an involvement of the posterior joint between the astragalus and os calcis, the gliding motion in which is essential to rotary motion of the foot.

That damage to this joint plays a part, we have had the opportunity to demonstrate by operation. Exactly what happens in all cases is hard to say. We believe, however, that the cases in which this motion is lost are those in which a fracture traverses the posterior articular surface of the calcis, or otherwise throws the joint hopelessly out of line or contour. Sometimes fracture involving the sustentaculum tali may contribute to this loss of motion (see Fig. 2).

Direct involvement of the joint by fracture is obvious in Fig. 4 (*d*). Indirect involvement by shifting of the relations between joint surfaces is competently shown in Fig. 3, and Fig. 4 (*b*).

The question whether or no the line of fracture directly invades the joint may or may not be shown by the skiagraph. The fact of functional interference with this joint may fairly be inferred from the loss of motion in this joint alone, unaccompanied by any loss of motion elsewhere in the foot or ankle. Such loss is, as we have shown, an *immediate* result of the fracture.

7. *Mechanical interference between the os calcis and the external malleolus.* — One of the common complaints after the patient begins walking, or trying to walk, is that there is severe pain, located just below the external malleolus. There is in *all* of these cases a marked bony thickening on the calcis below the malleolus. This is not edema or even callus, but is due to a displaced shell of bone, consisting of the relatively thick outer layer, apparently always split off and always displaced outward. Where it projects far outward, the external malleolus comes in contact with it and the peroneal tendons play across in altered surface. The condition is not unlike the similar contact between fibula and os calcis, established in some of the extremest cases of flatfoot. The trouble is not relieved by support of the arch in the fracture cases, though relievable by the use of the chisel, as we have had an opportunity to demonstrate.

The foregoing seem to be the factors which operate as causes of disability in these fractures. We have not found that shortening (from the knee to the ground, which is always present in some degree) is of any consequence. We have not found any loss of dorsal flexion, to say nothing of any disability caused by such loss, and we have not found any such interference with the function of the calf muscles as would be responsible for any real disability beyond possible clumsiness of gait.

C.

As to the differences in anatomical lesions, in cases with one or another of the above-noted causes of disability, there is not a great deal to be said. We do not believe that it is possible to classify os calcis fractures according to fracture lines. Even with the x-ray it is very hard to trace these lines, and when we have traced them, we may be sure that there are other lines in other planes which we have not seen, and our conclusions as to details are of little value. The sketches here submitted have been selected as representative of 35 directly at hand. They have been drawn to show all that can be made out with certainty from the plate, including much more detail than is possible in the reproduction of a print. (See Fig. 4.)

All our attempts at classification have failed. There is a general similarity, general only. The central point of the fracture, so to speak, usually lies *below the posterior part of the astragalus.* From this point lines, often in three directions, radiate through the bone. The variety of position and direction of these lines is obvious from the figures.

Usually there is some diminution in the vertical depth of the bone, accompanied, as we know, by a transverse widening. Displacement of the heel upward may result in very various changes in relation of the individual fragments.

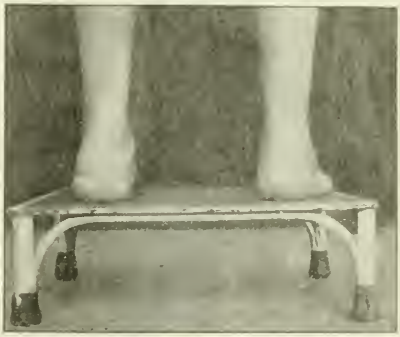

Fig. 1. Back view of an old case of double fracture of the os calcis, right and left. The loss of prominence of the tendo achillis is actual, not a defect of the photograph. The left foot shows well the thickening *below* the *external* malleolus.

From the x-ray we may say something about the amount of upward displacement of the heel, but this is accurate only in case x-rays are taken of both feet and compared. We may judge something of the shortening of the heel anteroposteriorly, a relatively unimportant matter. We may say with some probability what the chance is of trouble from the projection of fragments downward. Figure 3, for example, must almost inevitably give some trouble from the projection of the sharp spur shown. It may be that we can sometimes say from the skiagraph whether or no the posterior joint between astragalus and os calcis is damaged. (See Figs. 3 and 4.) This is, however, not always easy to make out with certainty.

To sum up, the x-ray tells us about spurs in the sole and (properly used) tells us about the amount of vertical displacement.

Our other data must come from physical examination. Measurements we have found of no use. The only measurement that is even accurate is a vertical measurement from the internal malleolus to the bottom of the heel and this tells us nothing not otherwise obtainable. Examination to estimate the vertical displacement is, owing to the swelling of the parts, too deceptive to be worth anything. In this regard we have come to trust the x-ray entirely, always using the skiagraph of the other foot as a "check."

Displacement of the heel outward may, on the contrary, be recognized with some accuracy by the touch. It is usually possible to make out pretty clearly the two lateral surfaces of the os calcis at the back, which should converge slightly upward toward a vertical line. If the whole heel is shoved outward or twisted in either direction, it is, therefore, usually possible to make the displacement out.

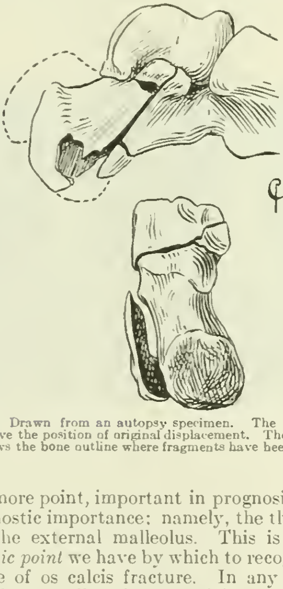

Fig. 2. Drawn from an autopsy specimen. The dotted line shows above the position of original displacement. The dotted line below shows the bone outline where fragments have been lost.

One more point, important in prognosis, is also of diagnostic importance: namely, the thickening below the external malleolus. This is the *best diagnostic point* we have by which to recognize the presence of os calcis fracture. In any case, no matter how swollen, it is possible to make out this thickening and to make out that it is at least in part *bony* and to estimate its projection outward.[6] In the severest cases this projection is so great that the normal prominence of the external malleolus has disappeared, not only from sight, but from touch, so far as any prominence is concerned. Bony projection definitely palpable below the malleolus has been present in every case we have examined of crushing fracture of the os calcis, whether fresh or old. It has been present in several cases in which the x-rays were doubtful, in which forced manipulation proved the fracture by showing marked crepitus. It was absent in one case of cross fracture only. The origin of this projection is readily seen on examination of a fresh specimen obtained by one of us (Fig. 2) in which may be seen how the outer plate of the bone, the cortical layer, is split clean off. When this specimen was dissected, the outward displacement of this plate was very marked, the interval between it and the crushed central mass of bone being filled with bony and other detritus.

We may say, then, that it is practicable by clinical examination, aided by the x-ray, to determine all of the displacements which are of importance to prognosis. It is our belief that these displacements in their varying degree and direction determine the gravity of this injury. It is not our belief that there is any great difference in the fracture in different cases other than that of displacement and of minor details of fracture lines, or that we can divide these cases of crushing fracture of the os calcis into any *definite* types of clinical value.

D.

What can be done to avoid bad end-results?—We all know that the ordinary treatment is a purely expectant one. Under it nothing is done except to prevent increase of displacement. It is obvious that the proper treatment theoretically is to correct the displacement, but attempts at such correction are met by three distinct difficulties, and for the five years that we have been at work on this problem we have, until lately, had no answer to the question in hand. To-day we believe we have the answer and it is quite as much with regard to the surgical treatment of fresh cases as with regard to the remedying of old disability that we wish to call your attention to these fractures.

The difficulties met with in handling fresh cases are:

1. *Difficulty in correcting displacement*, owing to swelling and the difficulty of getting a firm grip on the os calcis.

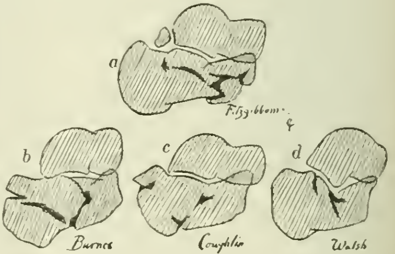

Fig. 3. From x-ray tracings showing fracture lines.

After experimenting with the Thomas wrench, with Adams' modification of the same, and with the heavy wrench used by plumbers, we have found that none of these are more efficient for this particular purpose than the unaided hand. In some cases it is possible with the thumbs and fingers to get a very satisfactory grip behind the tendo achillis, a grip sufficient to enable one to break up the impaction always present, and to reduce the fracture to the desired position. In other cases, *lateral* wrenching with the hands will break up the impaction, and then a direct pull will give the proper position.

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[6] The broadening of the heel is ordinarily described as if it were general. In fact, it is usually essentially limited to the *outer* side. Only where there has been involvement of the sustentaculum tali in the fracture, or where the smashing and broadening has been extreme, do we get palpable changes in *bony* contour to the inner side. (See Fig. 1.)

In still other cases, this sort of grip is insufficient. In these cases it is practicable to make small incisions (after aseptic preparation and under ether) on the inside and outside of the ankle just in front of the tendo achillis and to pass a steel sound (20 to 25 French) from side to side in front of the tendon and in contact with the upper surface of the bone. This gives a perfectly satisfactory grip for any manipulations desired. Regard will naturally be paid to asepsis, but the danger of sepsis is small, and, even at the worst, infection of this wound would not involve the fracture, as it is in no direct relation to it. We have used this maneuver repeatedly and have never had the least trouble from it in any way.

In *exceptional* fresh cases with great broadening we have used the felt and mallet, striking the outer side of the bone, as a means of correcting displacement where general loosening up was not called for by any displacement of the heel. We do not recommend it, however, as a routine.

2. *Difficulty in retaining position* of fragments after reducing the impaction. Tenotomy is confidently recommended. We have tried it and found it useless and unnecessary, save, perhaps, in exceptional cases for exceptional reasons. All that tenotomy will do may be accomplished by a very moderate plantar flexion at the ankle. In fact, the displacement of loose fragments depends less upon the pull of the heel cord than on the almost unavoidable pressure of the heel on the bed or on the plaster bandage.

To maintain correction, we must pin or suture the fragments or reimpact them.

Any maneuver involving incision in these cases, while we still have comminuted fragments and blood clot, is too risky to be advocated.

Reimpaction sounds impracticable. In fact, it is easy. We discovered how to go about it in the course of attempts to drive back the outwardly displaced outer cortical layer. In trying to accomplish the reduction of this outward spread, we found it possible to produce, by heavy lateral pressure, a reimpaction of the loose fragments into the shape desired, sufficiently firm to maintain the new relation of the fragments provided no strain is put upon them. This impaction may sometimes be accomplished by the pressure of the hands, driving the fragments in laterally. Ordinarily we have placed a firm sandbag under the inner side of the foot and then, protecting the tissues with a folded felt pad, have used a heavy mallet to reimpact the thoroughly loosened and replaced fragments in the desired position. (See Fig. 5.) Reimpaction is not absolute, and it is possible that increase of comminution may occur under this manipulation, but this not does matter.

Up to date, in a considerable number of cases, we have not failed to get a satisfactory impaction, good enough to hold the fragments where they were put. Nor have we had any untoward results; the reaction to a handling which seems brutally rough, is almost nil; rarely is there even any pain or any appreciable increase of swelling.

There is one more important point, namely, the restoration of lateral motion of pro- and supination of the foot. The loss of this motion has often been noted but no suggestions ever made as to removal of the disability.

We have found, as above noted, a great frequency of this disability but no regularity as to its mode of production. The posterior calcaneo-astragaloid joint may be "smashed" or luxated or subluxated and there seems no way of determining just what has happened. Accordingly we have gone ahead in the common cases, where this loss of motion persists after reduction of the impaction and the obvious displacement, by forcing pro- and supination till a fair degree of motion was secured. Exactly what happens it is hard to say. It is, at all events, fair to conclude that it is better to leave the joint with free motion than to leave it with none, even if some of this motion may perhaps be lost later. In our cases it has not been lost later and we reckon this part of the reduction as very important in securing a good functional result. In ten fresh cases good lateral motion was secured by such manipulation where there had been none, or next to none, before this manipulation.

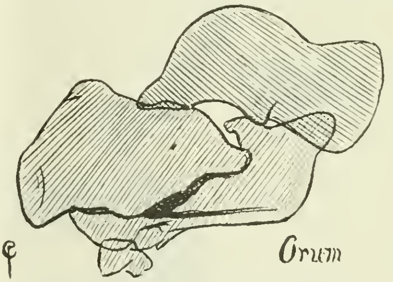

Fig. 4. From the x-ray. Shows how fragments may form a spur.

It seems, then, with these new methods of handling, that the old data as to the uselessness of interference must be abandoned. Given a case of fracture of the os calcis with *any* displacement, with loss of motion, with marked bony thickening below the outer malleolus, or with spurs, or the prospect of spur formation, toward the sole, it is our duty not to sit by idly, but to interfere. And our interference should occur before any considerable repair has gone on, usually at three to seven days by choice. The routine should be: Ether. Breaking up impaction (with hands alone or with a spindle inserted beneath the heel cord). Correction of any upward or lateral displacement. Securing of adequate motion between calcis and astragalus by forced pro- and supination. Reimpaction with sand-bag and mallet or by manual pressure.

AFTER-TREATMENT.

The apparatus used in after-treatment in our cases has been an ordinary "cast" of plaster of Paris equipped with two felt pads, one over the tendo achillis and os calcis, one over the dorsum of the foot. After the plaster is on, the foot is put up at about 15 to 20° of plantar flexion, and during the setting of the plaster, downward traction is made with the hands on the dorsum of the foot and behind at either side of the tendo achillis. Usually it seems wise to secure some inversion as well as very slight plantar flexion. The reaction following such reduction is surprisingly slight. The patient can be up on crutches (if the lesion is of one side only) within a week. In a week or ten days the primary callus seems adequate to hold the connection. At this time removal of the cast occasionally for massage and guarded active motion is wise. We have not allowed weight-bearing for a month, though delaying the beginning of use so long may be unnecessarily conservative. There seems little tendency to reproduction of deformity or stiffening. Return of *full* function is rather slow; probably three months will be a fair average of time.

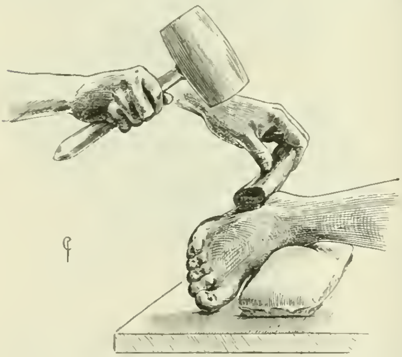

FIG. 5. Reimpaction after reduction.

The cases treated in this way have all done notably well; they are too few to form a sound basis for argument, perhaps, but there is no question in our minds that the results are incomparably better under this routine and that rational procedure along these lines should take the place of the utter negligence that has passed for treatment in these cases.

E.

Remedies for bad end-results. — The detailed conditions relating to disability in this fracture have been considered. Corresponding to these, and not in any routine fashion, we may apply the remedy which is mainly, though not always, an operative remedy. If the disabling condition is one simply of pes valgus, we may apply metal plates or felt pads with some success, or may use the Thomas sole, often of excellent service in these cases and sometimes better borne than plates because it avoids any direct pressure under the arch. Several years ago, when we first began to look into these cases, Dr. E. G. Brackett very kindly assisted us in trying palliative measures. It is because we have seen his thoroughly expert work on this early series that we feel confident in saying that it is only the cases of *uncomplicated static pes valgus* following this fracture that can substantially be benefited with support, while direct flattening of the arch and pes valgus from outward displacement of the heel are not remediable by apparatus. To some slight extent, plates or a Thomas sole will relieve the friction of the external malleolus on the os calcis and to some extent pads will relieve the pressure on the soft parts under the flattened arch, but these pads, to be effective, should not be placed in the arch but *under the heel itself.* Attempts to remedy pain from pressure of bony spurs in the sole by shifting the weight to other points with a plate have been of only very slight use as a rule.

Of the causes of disability *not* remediable by apparatus, we have:

Loss of motion in the joints.

Excessive bony thickening below the external malleolus.

Bony spurs in the sole.

Outward displacement of the heel.

Extreme upward displacement of the heel.

These conditions are all essentially operative. The operations we have done for them have been as follows:

In five inveterate cases forcible correction was done, under ether, with early passive motion, to restore lost lateral motion in the subastragaloid joints. One of these cases was a year old. In all cases the result was excellent; in fact, it is surprising that this scheme should work so well as it does in old cases.

Excessive thickening below the external malleolus we have treated in only two *old* cases. The treatment in these cases was chiseling off a considerable portion of the outer side of the bone through an incision behind and below the ankle. There seems to be no argument against this operation and no risk involved. There is no technical difficulty except that some of the thickening lies under the peroneal tendons, the sheath of which must be preserved. In one of the cases operated there was almost entire disappearance of the previous disabling pain and there was no evidence of any tendency to recurrence of bone growth. The man was able to resume work after over a year of idleness and has continued up to date. The other case showed some improvement after a month, but was lost track of, so that the permanent improvement cannot be stated.

Bony spurs in the sole we have removed in three cases only. In one case painful pressure at the site of a spur shown in an x-ray produced total disability. The spur was removed with a chisel through an incision just above the outer edge of the sole with the result of greatly improved approximately normal function. The second case was similar in details and results; the third is too recent to admit of report as to results.

Outward displacement of the heel we have dealt with but once. This was a case operated on by one of us in 1903 for extreme upward, as well as outward, displacement. Operation was done two months after injury to relieve practically total disability due to extreme flat foot combined with pain from pressure underneath the flattened arch. In this case the operation done was Gleich's operation for flat foot. A cross section of the os calcis behind the joint was executed with a chisel through lateral incisions. Probably the Gigli saw, then not available, would work better. The heel was then displaced downward about three quarters of an inch, inward about the same distance. Tenotomy of the tendo achillis was done and the position retained by plaster. At the end of five weeks he was already walking better than before the operation and was discharged with the os calcis firmly united in its new position. We have been unable to trace him since and can give no further data.

CONCLUSIONS.

The points we would wish to emphasize in this preliminary paper are as follows:

Comminuted fracture of the os calcis is relatively common.

Nearly all cases are of *substantially* the same type.

The results are rather frequently so imperfect as to interfere seriously with work or to disable the sufferer entirely.

The cause of disability is not the fracture as such, but certain displacements, outlined above, which should be remediable or rather preventable.

The treatment ordinarily advocated and carried out is no treatment at all. We have all of us been guilty of what is very nearly criminal negligence in regard to these cases.

Certain measures are practicable in the treatment of fresh cases that will minimize, or often prevent, the special displacements which are the cause of disability. It is our duty to adopt a routine embodying some such measures along the lines of the routine above suggested.

Provided such measures have not been carried out, and provided disability is present, palliation is possible by apparatus in some cases, while in others operations of no great gravity or technical difficulty will insure decided improvement of function.

This paper is, then, a plea for more accurate study and more active treatment, a plea, in other words, for a *real* surgical treatment for this class of lesions.

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The first lecture in the Harvey Society course of 1908–1909 was given on Oct. 24, at the New York Academy of Medicine, by Prof. A. Calmette, of the Institut Pasteur de Lille, France, on the subject, "Intestinal Infection and Immunity in Tuberculosis."

THE ETHMOID CELLS AT BIRTH AND THEIR DEVELOPMENT DURING FETAL LIFE.

BY E. J. CURRAN, M.D., BATHURST, AUSTRALIA.

(From the Laryngological Department of the Harvard Medical School.)

The object of this paper is a study of the ethmoid labyrinth at birth and its development during fetal life, with regard to the number, size, position and state of development of its cells. In order to gain an adequate idea of the condition to be found, and to realize the importance of a consideration of the development of the air sinuses at this stage in connection with what they have been and what they will afterwards become, it is necessary to review briefly some points in the anatomy of these structures in the adult, and to follow certain stages of development in the fetus.

The ethmoid bone lies in front of the sphenoid and between the orbital plates of the frontal. Its outer walls, the ossa plana, help to form the inner walls of the orbit. The ethmoid may be said to consist roughly of three parts: Two lateral masses made up of air cells with thin walls and turbinates, and the vertical plate, lamina perpendicularis. These three are united above by the cribriform plate which lies in a plane at right angles to them. The vertical plate hangs down between the lateral masses and forms the upper part of the nasal septum. There is a prolongation upward into the cranium, the crista galli, to form an attachment for the falx cerebri. The lateral mass, when *in situ*, hangs down on either side of the septum and forms part of the outer wall of the nasal cavity. Each is an approximately wedge-shaped mass, honeycombed with many air cells, the walls of which are made up of very thin bone and lined with thin ciliated epithelium with a small number of mucous and serous glands. The long axis of this prismatic-shaped mass is antero-posterior, and the apex downward, the base being attached to the cribriform plate. Externally, the smooth orbital surface of the ethmoid, the os planum, roofs in some air cells. It articulates above with the orbital plate of the frontal, which also roofs in external air cells. In front, the os planum articulates with the lachrymal bone and below with the orbital surface of the superior maxilla. Posteriorly, it articulates with the sphenoid, and postero-inferiorly with the orbital process of the palate bone, both of which serve to roof in some of the ethmoidal cells.

On the mesial surface, we have two, and sometimes three, turbinates (the inferior turbinate does not belong to the ethmoid bone). If there are two turbinates, there are also two meati, the middle meatus and the superior meatus, but if there happens to be a third turbinate, the space under it is called the meatus supremus. In the superior meatus, there are openings for the posterior ethmoidal cells and the sphenoidal sinus. If the meatus supremus is present, the sphenoidal sinus enters it, but if not, it drains into the vestigial fossa of this meatus.

The ethmoidal cells are divided into two groups, namely, (1) the posterior, which drain into the superior meatus, or into the space above the superior meatus; (2) the anterior, which drain into the middle meatus. In a general way, cells lying in front of the superior turbinate drain into the middle meatus and, therefore, are called anterior ethmoidal cells, and those which lie behind the anterior end of the superior turbinate usually empty into the superior meatus and are, therefore, called posterior ethmoidal cells.

In the grouping of the ethmoidal sinuses, it is, however, necessary to have in mind the basal lamellæ of the ethmoidal prism. According to one authority, there are seven basal lamellæ. Of these, five form turbinates, the other two becoming lost in the growth. The inferior turbinate is a separate bone and is not connected with the ethmoidal prism other than it articulates with the middle turbinate.

The first of the basal lamellæ forms the unciform process, a crescentic process with a sharp edge facing upward and lying under the anterior two thirds of the middle turbinate.

The second lamella becomes the bulla ethmoidalis.

The third lamella becomes the middle turbinate, and the fourth and fifth fuse together to form the superior turbinate. A failure to fuse gives the fourth turbinate, made by the fifth lamella.

The sixth lamella is the sphenoidal turbinate which, like the seventh, is vestigal. The spaces under the turbinates are known as meati. We then have the superior meatus, the middle meatus, and, when the fourth turbinate persists, we have under it the meatus supremus. The space between the unciform process and the bulla is called the groove of the unciform, and that between the bulla and the root of the middle turbinate is the groove of the bulla. These grooves are important, for it is from them that the budding of the mucous membrane takes place and pushes out through the cartilage and bone, when the latter is there, to form the antrum, anterior and posterior ethmoidal sinuses.

While this may be a convenient plan to follow for classification, I have examined different stages of development of the nasal cavities from the earliest fetus and have found nothing which would agree with such an arrangement of lamellæ. In the cases I examined, I found that as the ectoderm grows back, it begins to fold on the outer wall, and at the end of one and a half months of fetal life there are three folds. The ridges of these folds become the inferior, middle and superior turbinates. The inferior fold is the largest. This folding goes on and the inner invagination takes an upward direction until some time between the second and third months when the turbinates are completed. The turbinates at this time are of the same shape and occupy the same position, relatively, as in the adult. Immediately on the completion of the turbinates, under the middle turbinate another folding backwards begins — two folds this time, one for the unciform process and its groove and the other for the bulla ethmoidalis and its groove. The next step is a pitting back of the mucous membrane to form the cells, so we have a continuous process beginning with a pitting backward of the ectoderm to form the nasal cavity, a folding of the ectoderm to form the turbinates and unciform process and bulla ethmoidalis, and finally a growing or pitting backward into the substance of the lateral mass to form the cells.

All the nasal sinuses are thus formed by outgrowth of mucous membrane. It grows outward for the antrum and upward for the frontal, backward into the sphenoidal turbinate for the sphenoidal and into the lateral mass for the ethmoidal sinuses. It has been generally stated that the antrum shows in the fourth month of fetal life, but in some dissections of fetuses of three to four months I have found the antrum and ethmoidal sinuses in an advanced stage of development. (See Figs. 2 and 4.) The beginning of the outgrowths for the sphenoidal and the frontal are also well shown at this period. It is important also to remember that the sinuses grow from the mucous membrane connected with the ethmoid bone, and for this reason, not only the frontal and the sphenoidal sinuses should be considered ethmoidal cells, but also the antrum, which is in reality a large anterior ethmoidal cell having pushed its way into the superior maxilla, just as some of the ethmoid cells have pushed their way past the ethmoid into the sphenoid and frontal bones. The ethmoidal mucous membrane begins to eat its way into the cartilage of the lateral mass by the agency of the chondroclasts, and afterwards, when the bone has been formed, by the agency of the osteoclasts. It keeps on expanding till it has traveled even through distant structures, such as the sphenoidal sinus growing into the great wing of the sphenoid, and frontal sinus growing around the orbit and the antrum into the malar bone and into the palate below, and often sending out a bud which outgrows the ethmoidal bud and outstrips it in the race to become the frontal sinus, so that this may explain the connection which one writer found between the frontal sinus and the antrum. In some animals the frontal sinus drains into the antrum; indeed, there seems to be no limit to its growth through bony structures excepting that it might be the age of the person. But wherever it grows, it is still ethmoidal mucous membrane and its growth has been simply a growth of mucous membrane, combined with a destruction and absorption of bony tissue; that is, the mucous membrane grows and the bone is destroyed and absorbed. Not only is the mucous membrane carried into these pits, but with it the nerves and the vessels, and although it has been generally stated that the antrum is supplied by filaments of nerves from the second division of the fifth nerve, through Meckel's ganglion, distributing branches to the inner wall of the antrum through bony canals, I think that this is probably not true but that the whole of the nerve supply enters through the ostia of the different sinuses, carried in by the mucous membrane. Such a distribution is the case with the arterial supply; but the sinuses receive, on account of the readiness of the arteries to anastomose, in addition to that which enters by the ostium, other branches from surrounding bony tissue. I have tried to find evidence that the sinuses are supplied by nerves other than or in addition to those that enter by the ostia of these sinuses but have failed to find anything beyond the assertion that such is the case. In the absence of other evidence, therefore, I think it more reasonable to consider that the mucous membrane carries in its nerve supply with it wherever it spreads. The growth of the cells seems to depend upon the osteoclastic activity of the periosteum under the mucous membrane, and we thus have one cell growing fast and another slowly; one crowding out another and sometimes eating its way around it; but it is important to observe that they never eat through the dividing walls into each other. In an examination of a large number of skulls I have never found any to contain two ostia, not even a large frontal which spread from side to side with only a partial partition between; when this was the case there was only one drainage ostium into one side of the nose. This is proof that the cell grew from only one side of the nose. It is, however, possible to have adjacent cells broken down by pathological processes or trauma. Hence we have a thin bony partition between adjacent cells, but the position of this partition depends upon the quickness of one cell to outgrow another. This is shown well in the varied position of the septum dividing the two frontal sinuses. One nearly always outgrows the other, and notwithstanding the fact that the frontal bones are closed by a suture in the center which would seem to mark off the limit of each frontal sinus, yet one vigorously growing sinus finds no difficulty in trespassing on the area of the other and to such an extent that we find only one frontal sinus opening into one side of the nose, but so large that it completely crowds out the other, which in these cases remains an ethmoidal cell, and the septum which ought to be a frontal septum is in reality a frontal-ethmoidal septum. This is an important consideration.

The position of the ostia of these cells depends upon the place at which the mucous membrane begins to bud out, or pit. The favorite places for this are at the upper part of the unciform groove, at the upper part of the groove of the bulla and posterior part of the superior meatus. The pitting may begin at any part of the groove between the basal lamella, but these are the favorite places for the formation of the buds. If there is a meatus supremus, there will be a bud from this. If it is blended with the superior, the corresponding bud will be formed in the upper part of the superior. This often becomes the sphenoidal sinus; more often the presphenoidal cell.

Three accessory turbinates are described at the upper part of the unciform and three in the upper part of the groove of the bulla. I consider these to be nothing more than three bony partitions between outgrowths of the epithelium as they pit back into the ethmoid mass to form the cells.

In the unciform groove, between these so-called accessory turbinates, four cells push their way,— one into the agger nasi, another into the frontal bone to form the frontal sinus, and the other two ethmoidal cells into the surrounding tissue. The groove of the unciform generally ends in a blind sac; Sieur and Jacob found it in one to four cases continuous with the canal of the frontal sinus.

In the lower part of the groove of the unciform is the ostium of the maxillary sinus,— antrum of Highmore.

Most of the anterior ethmoidal cells open into the upper part of the groove of the unciform, the remainder into the groove of the ethmoid bulla. In the upper part of the groove of the bulla are the so-called accessory turbinals; there are three, and between each two springs a cell, three in all usually, one being the cell of the bulla which is almost constant. Into the superior meatus there are usually four cells opening, but if there is a fourth meatus there will be one, rarely two, openings into it and one less in the superior meatus. All ethmoidal cells in growing out may become branched, with partial partitions between them, and lead one to imagine that instead of one there were many present.

THE ETHMOIDAL CELLS IN THE FETUS AND AT BIRTH.

The lateral mass at birth is a thin plate of cartilage and bone with ossification proceeding from the os planum and probably other smaller centers. It carries the superior and middle turbinate processes, which are ossified at this time, as are also most of the walls of the cells in the ethmoid. Although at this age the entire ethmoid is narrow, it almost fills the nasal cavity. It has been usually stated that there are no ethmoidal cells present at birth; Keith says they do not begin to bud out till the third year; Lothrop puts the beginning of their development at the fifth year; Mosher says that a certain number are present at birth. In the fourteen babies' heads that I have dissected, about the same number of cells were present that are found in the adult. There were no cells which one could say were certainly sphenoid cells, but in every case I could easily find the future frontal sinus growing up into position. Not only were the cells in numbers ranging from nine to fourteen found in the 18 dissections, but I found a similar number and arrangement in a fetus of three and a half months, one of four months, one of five months and one of six and seven months. In all of these cases they were in a sufficiently advanced stage of development to enable a good classification to be made. Owing to the difficulty to dissect them in the ordinary way, and to their likelihood of being plugged, it is quite easy to see how they were overlooked by former observers. Exact drawings of these sections are shown here. In the series will also be noticed the gradual tendency of the upper turbinates or folds to disappear as growth goes on. The disappearance takes place by the merging of two or three into one. Sometimes this merging does not take place and we thus have the extra turbinates in the adult. Fig. 4 shows a head with the extra turbinate persisting. Whether these folds do disappear, or whether there were more or fewer of them present originally, is questionable. In some fetuses of two and a half to three months I found only three turbinates, whilst in older ones there were more. There were also more in some at this age. So I have come to the conclusion that no straightening out of folds takes place. Under the extra turbinate opens a cell (see Fig. 12), which looks more like a budding sphenoid sinus than any of the earlier specimens shown. The superior meatus receives the openings of three posterior cells. There are three cells opening into the groove of the unciform, the highest budding up for the frontal sinus and one small one into the groove of the bulla.

All of these dissections were done from the orbital side. The mucous membrane being carefully dissected from the cell walls, and the bone broken off bit by bit, the whole of the antrum and cells were exposed. The mucous membrane peeled off easily, and with care it was possible to have it stand out uninjured and in the same shape that it was when held by its bony or cartilaginous walls. In this way it could be easily seen into which meatus the cell opened, as each cell was held into the nasal mucous membrane by its stalk-opening, so that it stood out like a grape. The best results were obtained from formalin preparations.

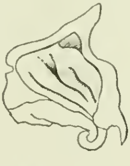

Fig. 1

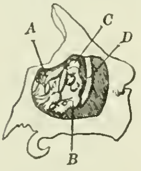

Fig. 2

FIG. 1. View of outer wall of nasal cavity of a fetus of three and one-half months, showing exact size and position of turbinates.

FIG. 2. Ethmoidal cells of same dissected from the orbital side, showing only the cells.

A. Probably sphenoidal sinus. *B*. Antrum of Highmore. *C*. Frontal sinus growing up into position. *D*. Lachrymal duct.

These figures are natural size drawings of a dissection of a fetus of about three and a half months. Fig. 1 is the outer wall of the nasal cavity showing the turbinates at this stage; Fig. 2 is a dissection of the same part from the orbital side. *B* shows the antrum of Highmore fairly well developed, like a small pocket, hanging over the entrance of the lachrymal duct. *D*. Four anterior ethmoidal cells are shown; the uppermost, *C*, will probably become the frontal. The posterior ethmoidal cells, two fusiform and two round, are also seen well. There is also a suggestion of a bud at *A* which will probably become the sphenoidal sinus.

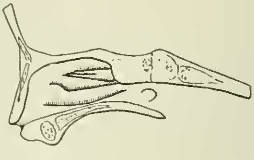

Fig. 3

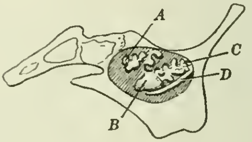

Fig. 4

FIG. 3. Outer walls of nasal cavity of a four months' fetus. Natural size.

FIG. 4. Dissection of ethmoidal cells of same dissected from orbital side.

A. Probably sphenoidal sinus(?). *B*. Antrum of Highmore. *C*. Probably frontal sinus. *D*. Lachrymal duct, emptying under inferior turbinate.

Figs. 3 and 4 are drawings, natural size, of a dissection of a fetus of about four months. Fig. 3 shows the position and size of the turbinates. In this case there were four ethmoidal turbinates, two more than are usually found in the adult. Note the relation that the cribriform plate bears to the palate, converging to the posterior, while in the adult they are usually parallel. (See Fig. 11.)

Fig. 4 shows the dissection from the orbital side. The ethmoidal cartilages and orbital plate, etc., are dissected away from the nasal mucous membrane and the mucous membrane lining the ethmoidal sinuses and antrum. The plate shows the exact number and size of these budding sinuses, and below is the antrum, the largest bud. The posterior ethmoidal cells are pulled slightly away from the anterior to show more clearly which are anterior and which are posterior. It will be seen that the antrum really belongs to the anterior ethmoidal cells and at this stage shows little separation from them. In this fetus there are two anterior cells opening into the groove of the bulla by one common opening and there are four cells opening into the groove of the ensiform by two openings besides the opening of the antrum. The highest of these belongs to a group of three which open by a common opening and must be the future frontal sinus. In front of these cells is the lachrymal duct. The posterior cells open under the three upper turbinates. Two open into the superior meatus and one under each of the highest tur-

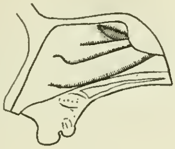

Fig. 5

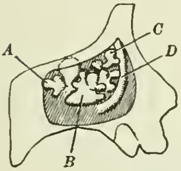

Fig. 6

Fig. 5. Outer wall of nasal cavity of a fetus of five months. Natural size.

Fig. 6. Dissection of cells of same from orbital side.

A. Sphenoidal sinus. *B*. Antrum of Highmore. *C*. Frontal sinus. *D*. Lachrymal duct.

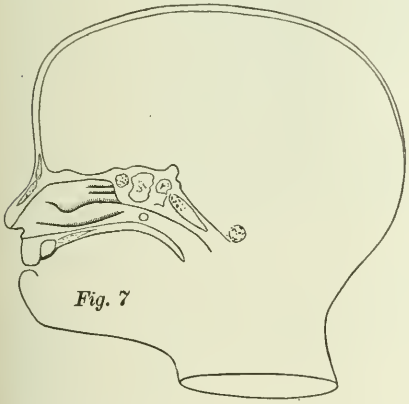

Fig. 7

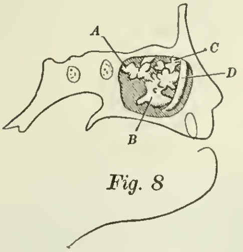

Fig. 8

Fig. 7. Outer wall of nasal cavity of a six months' fetus. Natural size.

Fig. 8. Dissection of cells from orbital side of same.

A. Sphenoidal sinus. *B*. Antrum of Highmore. *C*. Frontal sinus. *D*. Lachrymal duct.

binates. One of these cells, the one that opens into the highest meatus, will probably become the sphenoidal sinus.

Fig. 5 shows the exact size and position of four ethmoidal turbinates beside the maxillary turbinate as in the previous picture of three and a half month fetus; but in this fetus (five months) the second turbinate from the top is folded up instead of down as the others are. The two highest take a direction leaving an angle with the superior turbinate, as shown in the picture. The palate converges posteriorly to the cribriform plate as in Figs. 3 and 4.

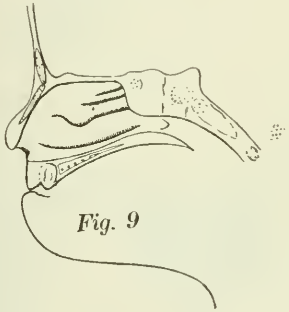

Fig. 9

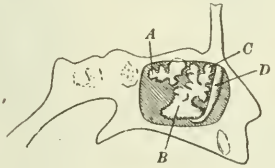

Fig. 10

Fig. 9. Outer wall of nasal cavity of a fetus of seven months. Natural size.

Fig. 10. Orbital dissection of ethmoidal cells of same.

A. Sphenoidal sinus(?). *B*. Antrum. *C*. Frontal sinus. *D*. Lachrymal duct.

Fig. 6 shows the size and position of the air sinuses; the dissection is from the orbital side. The bud for the frontal sinuses is growing higher. There are nine anterior ethmoidal cells — five opening into the groove of the ensiform and four into the groove of the bulla. The lachrymal duct is shown opening under the inferior turbinate. One of the posterior cells has grown large. This opens into the superior meatus and the other three open into the space between the two highest folds.

Figs. 7 and 8 show a dissection of a fetus of about six months. Turbinates, cells, etc., are of the exact normal size and position. These diagrams read with the others need no description.

Figs. 9 and 10 show dissections of a fetus of about seven months. Turbinates, cells, etc., are of actual size and position. In this diagram also the anterior and posterior cells have been pulled apart to show more clearly the separation of their origin.

Figs. 11 and 12 are exact drawings of a dissection of the cells and turbinates of a child at birth. In this case there are three ethmoidal turbinates, but in 14 of the 18 babies' heads which I dissected there were only two, as in most of the adults. Note the relation of the cribriform plate to the palate bone almost parallel now.

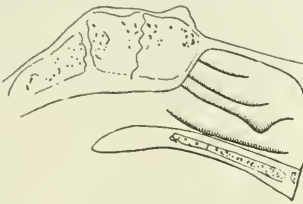

Fig. 11

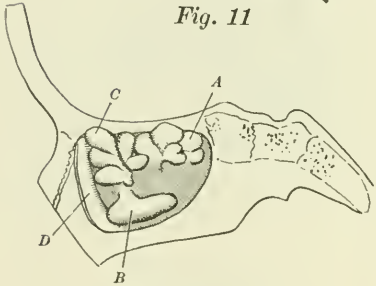

Fig. 12

Fig. 11. Outer wall of nasal cavity of a baby at birth. Natural size.
Fig. 12. Dissection of cells of same from orbital side.
A. Sphenoidal sinus(?). *B*. Antrum. *C*. Frontal sinus. *D*. Lachrymal duct.

There are four cells opening into the superior meatus, one into the highest meatus and six into the middle meatus, two of which open into the groove of the unciform. The antrum is well developed but not more so than the other ethmoidal cells which contain about three times as much air space at birth as the antrum.

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A CASE OF COINCIDENT TUBAL AND INTRA-UTERINE PREGNANCY.

BY CHARLES M. GREEN, M.D., BOSTON.

(From the Gynæcological Clinic of the Boston City Hospital.)

On June 6, 1907, Dr. Ernest B. Young, first assistant visiting surgeon of the Department for Diseases of Women, reported a case of coincident extra- and intra-uterine pregnancy, and gave an interesting statement of the present knowledge of this rather rare condition, with an inclusive, recent bibliography.[1] This was the first case of this character that had occurred in the clinic. In October, 1907, a similar case came under my observation; and a brief report of the experience, and the interesting pathological findings seem worthy of record.

H. E., aged thirty-three, born in Canada, married eight years, had had two children, in 1903 and 1905, with normal labors and puerperia: she had never miscarried. The menstrual history was not noteworthy, and the last period the patient said had occurred three weeks previously. The present illness began two weeks before entrance; during this time there had been sharp intermittent pain in the rectum near the anus, not aggravated by defecation, and a continuous dull ache over the entire abdomen. The woman had had one chill, and had vomited two or three times. Two weeks before there had been a similar attack, on which the patient remained in bed for two hours, and found relief with hot water bottles. Two months before entrance, and again after the last supposed menstruation three weeks before admission, the patient flowed intermittently for a week after the regular period had ceased.

On admission the pulse was 128, and the temperature 100.2° F. General physical examination showed no abnormality, except a cardiac systolic murmur. The abdomen was lax, tympanitic, and not tender; but bi-manual examination, besides the traumata of parturition, revealed a soft, cyst-like, median mass rising from the pelvis to within 6 cm. of the umbilicus. In the pelvis, to the right and posterior, was a soft, sausage-shaped, sensitive mass connected with what felt like a cyst. The uterus was not differentiated, and was thought to be concealed by a superimposed cyst. The white blood count was 13,000: the hæmoglobin test showed 70%. Neither the history nor the physical examination seemed to me and to several colleagues to warrant a diagnosis of pregnancy, either tubal or uterine; and the probable diagnosis made was ovarian cyst with twisted pedicle, with a supervening inflammatory process. In the face of this false diagnosis, however, the satisfaction remains that the treatment pursued was the most appropriate for the condition found.

On opening the abdomen the cyst-like mass was found to be the uterus, four months pregnant; and the supposed thickened and twisted pedicle was seen to be a pregnant tube surrounded with from four to six ounces of blood clot, forming a mass in which the vermiform appendix was involved. Taking especial care to disturb the uterus as little as possible, I removed the appendix and the tubal mass, and closed the incision. On the same evening the fœtal membranes ruptured; four days later a slightly macerated, four months' fœtus was cast off spontaneously, and the uterus was curetted. The subsequent convalescence was uneventful.

The intra-uterine fœtus had apparently been dead two or three days, and if so, was alive at the time of the removal of the partly aborted tubal pregnancy. Young states[2] that "in a majority of the published records, the disturbance of one of the twin pregnancies, usually the extra-uterine, has ended the other"; and such was the result in this case, in spite of every effort to ensure the continuance of the intra-uterine pregnancy.

Pathological Report.

BY ARTHUR B. EMMONS, 2d, M.D.,
Senior Pathological Interne.

GROSS DESCRIPTION.

The specimens are four in number: A fallopian tube, a small piece of soft, grayish, gelatinous tissue, a fetus and the vermiform appendix.

1. The fallopian tube measures 8.5 cm. in length. It has been opened by a longitudinal incision throughout its superior surface and has been stripped back from its contents.

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[1] Boston Med. and Surg. Jour., vol. clvi, No. 23.

[2] *Loc. cit.*

There is considerable difference in the size and general character of the proximal 2 cm. and the remaining distal portion of the tube. The proximal portion shows little change. It averages 8 mm. in diameter, the mucous surface is smooth and glistening and its lumen is completely shut off from that of the remainder of the tube by a sharp constriction.

A CASE OF PREGNANCY — GREEN

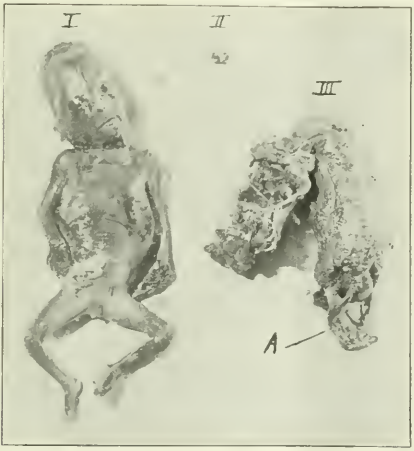

Fig. No. I. Fetus expelled from uterus four days after operation for extra-uterine pregnancy.

Fig. No. II. Cephalic extremity of fetus removed from Fallopian tube in which extra-uterine pregnancy had taken place.

Fig. No. III. Fallopian tube in which extra-uterine gestation took place. The tube wall has been pulled away from the products of conception, showing the point of attachment and pedunculated appearance of the latter. At *A*, the free extremity of the products of conception, the fetal membranes can be seen.

Normal vermiform appendix.

MISCROCOPICAL FINDINGS.

Sections from the greyish tissue within the lumen of the fallopian tube show chorionic villi, large pale staining cells with rather small vesicular nuclei (decidual cells) and an occasional multinuclear cell (giant cell of pregnancy) and polymorphonuclear leucocytes (acute inflammation).

The cephalic extremity on section shows embryonic muscle cells and cartilage, the nuclei of which, for the most part, fail to take the stain.

The vermiform appendix shows small groups of lymphocytes and eosinophiles in the submucosa (slight chronic appendicitis).

SUMMARY AND CONCLUSIONS.

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5. The placental tissues of the ectopic gestation covered a considerable area and their blood supply was good, affording sufficient nourishment to have developed a fœtus within four months considerably larger than this one. 6. The placental site within the uterus, as determined by curreting, was upon the side opposite the tube that contained the ectopic gestation, making access to this tube possible.

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There is considerable difference in the size and general character of the proximal 2 cm. and the remaining distal portion of the tube. The proximal portion shows little change. It averages 8 mm. in diameter, the mucous surface is smooth and glistening and its lumen is completely shut off from that of the remainder of the tube by a sharp constriction.

The lumen of the distal 7 cm. of the tube is considerably enlarged and contains a circular, elongated, rather firm and elastic mass, which is firmly attached at the extreme proximal end of the greatly enlarged portion of the lumen of the tube, into which it hangs as a pedunculated mass. This mass measures 1 cm. in diameter at its point of attachment. Beyond this point it rapidly increases in size, measuring 3.5 cm. at its middle and distal portions. Its external surface is slightly granular, light gray to dark red, and attached to it are a few dark red, fragile tags. The distal extremity of the mass is somewhat depressed (funnel-shaped) and is lobulated.

The glistening appearance of this lobulated extremity is due to a thin, delicate membrane, which lines it and hangs down from its free edge.

On section the pedunculated mass described above shows the following picture: The proximal 6 cm. is composed of greyish, elastic tissue throughout which are small, dark red, rather soft areas. The distal 2 cm. consists of a dark red, elastic substance which is sharply demarkated from the proximal portion. The proximal portion resembles placental tissue; the distal, blood clot, which has formed about the placental tissue and which has separated the veil-like membranes from their placental attachment.

2. In the region of the distal extremity of the fallopian tube there is a small piece of grayish, gelatinous tissue, which measures 0.9 mm. x 5 mm. x 9 mm. Its surfaces are smooth and glistening except at one point where it is torn. The general shape of this specimen is hemispherical. At one point there is a slight depression in the surface. Just below and to each side of this there is a semi-opaque area 1 mm. in diameter. Its surface is semi-transparent and shining through it is a dark bluish area. This specimen is the cephalic extremity of a fetus which has developed to the point where the eyes are well differentiated.

3. The fetus was received at the pathological laboratory four days after the other specimens. It measures 18 cm. in length, is dark red, somewhat softer than normal and shows evidence of having been dead at least two or three days before being expelled from the uterus. The head, body and extremities are well formed. The sex is easily determinable as that of a female.

4. The vermiform appendix measures 5 cm. in length. Its external surface is smooth and glistening. The blood vessels are not injected. The mucous membrane is normal.

GROSS DIAGNOSES.

Extra-uterine pregnancy (tubal).

Cephalic extremity of small fetus. (Age questionable.)

Fetus 18 cm. in length (age about four months).

Normal vermiform appendix.

MISCROCOPICAL FINDINGS.

Sections from the greyish tissue within the lumen of the fallopian tube show chorionic villi, large pale staining cells with rather small vesicular nuclei (decidual cells) and an occasional multinuclear cell (giant cell of pregnancy) and polymorphonuclear leucocytes (acute inflammation).

The cephalic extremity on section shows embryonic muscle cells and cartilage, the nuclei of which, for the most part, fail to take the stain.

The vermiform appendix shows small groups of lymphocytes and eosinophiles in the submucosa (slight chronic appendicitis).

SUMMARY AND CONCLUSIONS.

This is, unquestionably a coincidental intra- and extra-uterine pregnancy.

The interesting question arises whether we have in this case an instance of superfecundation, the fertilization of the two ova taking place at or about the same time; or of superfœtation, in which several months may intervene between the two impregnations. The uterine cavity does not become completely obliterated until the reflexa and the vera fuse at the end of the third month of pregnancy; after that time superfœtation is impossible, but prior to that period its theoretical possibility must be admitted (Williams). On the other hand, superfœtation is not considered possible in this connection by most investigators (Young). Simpson concludes that there is no positive proof that the ectopic ovum may become fecundated after the uterine, as the difference of size is probably due to insufficient nourishment of the former. In view of the difficulty of classification in the case reported, the following discussion of the subject by Dr. Emmons and associates in the Pathological Department is of interest:

DISCUSSION.

Coincidental intra- and extra-uterine pregnancy might take place at or about the same time; the intra-uterine pregnancy might precede the extra-uterine or the extra-uterine pregnancy might precede the intra-uterine.

In coincidental extra- and intra-uterine pregnancy it is generally conceded that the coincidental intra-uterine and extra-uterine gestation occur, as a rule, at or about the same time. The difference in the size of the two fœtus is due to the adverse conditions offered for growth without the uterine cavity.

The following facts might make it possible that in this case the extra-uterine pregnancy took place some time after the intra-uterine pregnancy. 1. It is not an anatomical impossibility. 2. This patient was regularly exposed to the possibility of becoming pregnant. 3. The tissues of both fœtus stained well, suggesting that neither had been long dead. 4. The fœtus within the uterine cavity corresponded to one at about the fourth month of normal gestation; the fœtus within the fallopian tube might be easily mistaken for one at about the sixth week of normal pregnancy. 5. The placental tissues of the ectopic gestation covered a considerable area and their blood supply was good, affording sufficient nourishment to have developed a fœtus within four months considerably larger than this one. 6. The placental site within the uterus, as determined by curreting, was upon the side opposite the tube that contained the ectopic gestation, making access to this tube possible.

THE SERUM TREATMENT OF EPIDEMIC CEREBROSPINAL MENINGITIS, WITH A REPORT OF TWENTY-TWO CASES.

BY FRANK TAYLOR FULTON, M.D.,
Pathologist to the Rhode Island Hospital, Providence.

(Continued from No. 17, p. 542.)

CONCLUSIONS.

In the mind of one who has observed the ordinary clinical course of epidemic cerebrospinal meningitis, there is no doubt but that it is modified by the intraspinal injection of this antiserum. For in nearly all instances in which there was reason to hope for benefit, there followed a favorable change in the symptoms coincident with the administration of the serum and a subsequent gradual progression to complete recovery. In but two of the fatal cases was treatment begun early and carried out thoroughly. While the mortality in a small series of cases should not bear too much weight in forming judgment, it should have some consideration and the fact that the total mortality was but 37% and, after eliminating the moribund and chronic cases, was but 20%, is significant, especially as it corresponds closely in this regard to other series so treated.

The effect of the injection on the cerebrospinal fluid is even more striking, for in all but one instance the purulent or turbid fluid cleared gradually from the beginning of the injections and the bacteria disappeared quickly from both smear and culture.

Too much emphasis cannot be laid upon the importance of early diagnosis, for the only possible hope of benefiting the severest cases is by very early use of the serum.

Abstracts of histories follow:

Case I. Frank Van L. Age, eight.

Patient was first seen in consultation with Dr. Thompson and Dr. Hersey, Jan. 8, 1908. He had been ill for six days. The onset was with vomiting and headache followed by delirium on the second and third day. A profuse rash caused the probable diagnosis of measles to be made at the onset. The child continued in active delirium day and night. When seen on Jan. 8 there was marked retraction of the neck, slight bowing of the back, marked Kernig's sign, hyperesthesia and absent patellar reflexes, paresis of the right arm and a suggestion of external strabismus. Temperature ranged from 102° to 103° F. He was given antiserum on Jan. 8, 9 and 11. Chloroform anesthesia was used. There was distinct improvement from the first injection. On Jan. 14 reflexes were all active and he was perfectly rational. He was eating well and had recovered the use of his right arm almost perfectly. He improved gradually so that he was allowed to sit up in bed. On Jan. 31, he had several attacks of vomiting, had a chill and his temperature rose to 104° F. with meningeal symptoms present. He was given antiserum on Feb. 2, and was then removed to the Rhode Island Hospital.

After admission, patient was given antiserum on Feb. 3, 5, 6 and 7. There was progressive improvement so that the temperature reached normal by about Feb. 12, and the patient was put on house diet. He, however, was quite fretful still and complained of some pain in his back. Temperature remained about at normal until Feb. 18, nearly a week. His appetite was good and he rested well at night, moved his head freely and seemed in no pain or especial discomfort. Was cheerful and would entertain himself with picture books. On Feb. 18, about ten o'clock in the morning, he had a chill with a temperature of 100.6° F., and about one o'clock another chill with vomiting, retraction of the head, delirium and a white count of 37,000, temperature 103.2° F. Lumbar puncture showed very turbid fluid under pressure, in which there were diplococci both in the smear and culture. He was again given serum on Feb. 18, 19, 21, 22, 23, 24, 26 and 28. This represented the second relapse. With this relapse the patient had marked retraction of the head and general rigidity, with vomiting and delirium. He improved again gradually until the 28th and he seemed to be doing well. The cerebrospinal fluid was practically clear, there being only a few fibrinous shreds. On the 29th he vomited but his temperature was normal. On March 1 he had three convulsions and vomited. Temperature rose to 101.6° F. Cerebrospinal fluid at that time was not especially turbid, as at the previous distinct relapse, but there were found on two occasions organisms suggesting a secondary infection with the streptococcus. These did not grow satisfactorily and were never identified. Inasmuch as the patient improved again it is probable that these were skin contaminations, as one or two of the puncture wounds had been slightly infected. The condition of the patient from March 1 until March 17 was very critical. He had from time to time convulsions, was part of the time delirious and would fail to recognize any one, and then he would have rational times when he seemed better. After the 17th he improved gradually but very slowly. By April 1 there was distinct improvement. Patient began to gain in weight and complained of no especial discomfort or pain. By April 9 he was out of doors on a truck, but his back and neck were absolutely stiff except for some lateral motion of the head. His legs were drawn up so that he could not extend them, the left more than the right. His improvement from that time was gradual but slow. By June 11 he was able to sit up in a chair, but there was slight flexion of the left leg. He was referred to the orthopedic department and tenotomy was advised as soon as patient was able to stand an operation. This was objected to by the parents and on June 19 patient left the hospital, at which time the following note was made:

"Patient bright mentally. General health very good. Pupils normal. Head can be turned easily from side to side. Very slight rigidity on bringing chin to chest. Back very rigid. All bending done at hips. Patient can fully extend right leg. No contractures. Marked Kernig's sign present. Knee jerks present and normal. No Babinski. Ankle clonus present. Left leg cannot be fully extended, due to some shortening of hamstring tendons. Also shortening of tendo Achilles so that foot is held in extension and cannot be flexed completely. Knee jerk normal. No Babinski. Ankle clonus present. Good muscular power in both legs. Patient can stand alone on right leg but cannot stand on left leg because of the contracture."

Since his discharge he has visited the hospital several times. He at first walked on crutches but soon discarded them, gaining rapidly the use of his legs, and when last seen was almost entirely recovered. There was still some slight stiffness of the back, but his recent improvement would indicate complete ultimate recovery.

The details of the examination of the cerebrospinal fluid will not be given. On Jan. 8 and 9 the diplococci were present in smear and culture. On the 11th the fluid was almost clear. On Feb. 2 the diplococci were abundant in smear and culture and were present in smaller numbers on Feb. 3. Spinal fluid subsequently became clear. Feb. 18 the diplococci were present in smear and culture. No growth on the 19th nor at any subsequent time.

This case is reported more in detail because there were three relapses, in two of which the cerebrospinal fluid was very turbid and the organism was obtained both in smear and culture, and because he received twenty-two doses of antiserum, 660 ccm. in all. In the original attack and in the first two relapses he seemed to respond very well to the serum. The administration of the last few doses seemed to have no effect whatever on the course of the disease.

Case II. Tomaso D. Age, nine.

Patient was admitted on Jan. 18, 1908, to Dr. Shattuck's service. Family history and previous history have no especial bearing.

Patient was taken ill five days before admission. He went to school during the day and ate as usual except at supper, when his appetite seemed to have failed. He went to bed at 9 o'clock apparently well. He woke at midnight with pain in back, arms, legs and with a severe headache. No chills or fever noticed. The following day he vomited, complained of headache and there was fever and sweating. He was up in the afternoon for four or five hours and slept well that night. On the second day his parents think he was sicker than at any other time either before or since. The doctor was called for the first time on this day. He vomited several times. On the third day he was clear mentally and was on the whole much quieter. The rigidity of the neck was first noticed on that day. On the fourth day he was rather stuporous, part of the time conscious, but occasionally slightly delirious. Slept fairly well.

On admission at times he was slightly delirious, but part of the time perfectly rational and asked for something to eat. He at no time had any convulsions. Eyes normal, herpes about the lips, head slightly retracted and neck rigid. Abdomen rigid but otherwise normal. Knee jerks absent, Babinski absent, ankle clonus absent. Kernig's present more on the left than on the right. He was given four doses of antiserum on successive days; the interval of administration between the first and second dose being thirty-six hours. He received the first dose on the fifth day of the disease and the last dose on Jan. 22, nine days after the onset. His improvement was steady. He was discharged Feb. 9, twenty-seven days after being taken sick. He has been seen a couple of times since, and when last heard of was back at school. Temperature at one time reached 103° F., but reached normal six days after admission.

Cerebrospinal fluid. — Diplococci were present within the cells of the fluid on Jan. 19, and also grew in culture. They were less abundant within the cells of the smear on Jan. 20, and again grew in culture. Jan. 21 and 22 showed no bacteria in smear or culture. The fluid grew clearer gradually after the first injection.

Case III. Florence A. Age fifty-one.

Admitted to the service of Dr. Shattuck, Jan. 26, 1908.

Patient was taken ill with a severe headache six days before admission. The following day she was much worse and vomited. Three days before admission she became unconscious and was in a more or less comatose condition until she was admitted. She was sent in for uremia. On admission she was in an unconscious comatose state. There was slight divergent strabismus, herpes on the lips, coarse râles in the lungs. Urine showed many coarsely and finely granular and hyaline casts with red blood cells and leucocytes. There was also sugar in the urine. A lumbar puncture was made and showed a turbid cerebrospinal fluid. She was given 30 ccm. of serum but grew rapidly worse. The breathing, which was sterterous on admission, became more so, the chest more filled with râles and the patient died about twelve hours after the administration of the serum. The diagnosis was epidemic cerebrospinal meningitis with acute nephritis and glycosuria. The cerebrospinal fluid showed a few intracellular diplococci and in twenty-four hours the characteristic growth of the diplococcus intracellularis meningitidis appeared in culture.

Case IV. Vincenzo B. Age, fourteen.

Admitted Feb. 14, 1908, to Dr. Shattuck's service.

Patient was admitted to the hospital on the second day of the disease, about thirty hours after the onset. He was noisy and delirious on admission and had already lost control of his sphincters. He was extremely ill. He was given antiserum soon after admission, with no immediate beneficial effect. He was given a second dose about thirty hours after the first, and daily doses of 30 ccm. each for ten successive days. About the sixth day he began to have very severe convulsions several times a day, continuing for about three days. On Feb. 24 there began to be definite signs of improvement which was gradual and progressive from that time. After the 24th he had two doses of serum at intervals of forty-eight hours and another dose after seventy-two hours. On March 2 there was some discharge from the ear. This lasted for about ten days. No subsequent impairment of hearing. He was allowed to sit up in a chair about March 16, and was discharged from the hospital cured on March 28.

Cerebrospinal fluid. — On Feb. 14 and 16 showed diplococcus in the smear and culture. The fluid was carefully examined after each of the subsequent eleven punctures, but no bacteria were found nor did any grow in culture. The fluid was almost purulent at first and cleared up more slowly than usual, but finally became quite clear.

This was a case of unusual severity. He received thirteen doses of antiserum, in all 390 ccm.

Case V. Mary D. Age, ten.

Admitted Feb. 20, 1908, to Dr. Shattuck's service.

Patient was taken sick on Feb. 16. The onset was rather gradual. She became totally deaf on the second day. At no time was she comatose or delirious. She had no convulsions. She was rational on admission and was able to communicate by writing. There was retraction of the head and Kernig's sign was present. Knee jerks present and normal. Ankle clonus and Babinski negative. She was given five injections of serum, the first three on successive days and the fourth after forty-eight hours and the fifth after seventy-two hours. She showed signs of improvement after the second injection. Temperature reached normal about March 3, though it was somewhat irregular for two or three weeks later. The convalescence was rather slow but progressive. About March 5 she had some otitis media, but this cleared up in about a weak. There was never any improvement in her hearing. Patient remained in the hospital for about seven weeks and was discharged completely cured excepting for absolute deafness, which is probably permanent.

Cerebrospinal fluid. — Numerous diplococci were found within and outside the cells on Feb. 20, and a typical growth appeared on blood serum. No bacteria were found Feb. 21, but the organism did grow in culture. No subsequent growth nor were the diplococci again observed in smears. By the fourth puncture the fluid was quite clear.

Case VI. Robert E. B. Age, fifteen.

Admitted March 3, 1908, to the service of Dr. Shattuck.

Duration of illness over five months. Patient was taken suddenly on Sept. 24, 1907. The course of the disease was characteristic of epidemic cerebrospinal meningitis. He recovered so as to be out of bed, but there was some persistent stiffness of the various muscles. He again went to bed about five weeks before admission.

On admission his temperature was normal, but he had stiffness of the neck, hyperesthesia and was considerably emaciated. Knee jerks were absent. No Babinski. Slight ankle clonus on the left. He was given antiserum March 3, 6 and 11. There was a slight rise of temperature on the day following each injection. Patient did not improve, returned home and subsequently died.

Cerebrospinal fluid. — The fluid was only slightly cloudy, but contained Gram negative diplococci. It showed a characteristic growth in culture of the diplococcus intracellularis meningitidis. On March 6 none were observed in smear, the culture being indefinite. No growth, no bacteria on March 11. Fluid almost absolutely clear at the last puncture.

Case VII. Mabel C. Age, thirteen.

Admitted to Dr. Shattuck's service March 8, 1908.

Patient was taken suddenly ill on March 6. She had a few erythematous spots on body and herpes on the lips. Kernig's sign present on the left side, not so marked on the right. Knee jerks increased. No ankle clonus. No Babinski. Temperature in the afternoon of the 9th was 104° F. and on the morning of the 10th, 99.6° F. Serum was administered on the 9th, 10th and 11th. There was a gradual fall of the temperature until the 25th, when it reached normal, though later there was some irregularity for several days. The convalescence was slow but continually progressive. Patient was allowed to sit up in a chair on April 10, one month after admission. She remained in the hospital until April 24. The time in the hospital was prolonged on account of some trouble in connection with a carious tooth.

Cerebrospinal fluid.— Intra- and extracellular diplococci were found on March 9. The organism grew in culture. No growth on March 10, but a few diplococci seen in smear. No bacteria and culture sterile on March 11. Fluid was still slightly turbid at the last puncture.

Case VIII. Hassan M. Age, thirty-two.

Admitted to the service of Dr. Shattuck, March 21, 1908.

Patient was taken ill rather suddenly five days before admission. The onset was with headache, backache and pain in the abdomen. No vomiting. On admission there were herpes covering the lips and chin. Head retracted and neck stiff. Kernig's sign present. Knee jerk absent on left side. Slight reflex on right. No ankle clonus. No Babinski. No pupillary symptoms. Temperature, 102° F. There had been no delirium. Patient was conscious but somewhat noisy. He received three doses of 30 ccm. each of antiserum on three successive days, March 21, 22 and 23. Improvement began with the first injection, but was rather slow. He was still noisy on March 24 and there was some slight delirium during the night. The temperature dropped gradually until it was normal by March 31. Subsequently, however, there was a slight rise of temperature and on the evening of March 9 the temperature was 102° F. and signs of bronchopneumonia were found in the right lung. The irregular temperature persisted for about sixteen days more, but patient subsequently went on to complete recovery.

Cerebrospinal fluid. — March 21 no organisms were observed in the sediment but a typical growth appeared in culture. No bacteria and no growth in the fluid on March 22 and 23. The fluid at the last puncture was still quite turbid.

The patient's convalescence was rather slow. It is possible that it might have been hastened by continuing the treatment.

Case IX. Arcu M. Age, twelve.

Admitted to Dr. Kingman's service, April 17, 1908.

The history was very meager. All that could be learned was that he had been sick for two days and that the attack came on suddenly with vomiting and stiffness of the neck. On entrance respirations were labored and examination showed edema of the lungs. There was some retraction of the head and slight Kernig's sign. Several small red spots from 1 to 3 mm. in diameter were found on the body and lower extremities. No herpes. Patient very cyanotic. By lumbar puncture 65 ccm. of fluid was withdrawn and 30 ccm. of antiserum given. Patient died almost immediately upon the injection of the serum. There were no diplococci found in smear, but a typical growth appeared in culture.

Case X. Mary A. T. Nurse. Age, thirty-two.

Admitted to Dr. Kingman's service April 19, 1908.

For a couple of days before admission the patient had some stiffness of the neck and legs. On April 18 had a severe headache, backache and vomited a number of times.

On admission she was conscious and rational. Eyes normal. Neck stiff. No retraction of the head. No herpes on lips. No rash. Kernig's sign present but not marked. Reflexes active. Patellar reflexes exaggerated. No ankle clonus.

At the first attempt to give serum no spinal fluid was obtained and consequently no serum was given that night. It was given, however, the following day. The pain, headache and vomiting persisted. A second dose of antiserum was given April 21. The lumbar puncture was performed without anesthesia and the patient suffered very much. Complained especially of the pain in her head, and during the injection became delirious. After the second dose the head was still more retracted, the neck somewhat stiffer and Kernig's sign more marked. She was at times irrational and slightly delirious. She was given five doses in all, four on successive days and the fifth two days after the fourth. There was some delirium on April 23, but the following day she was more comfortable. Her temperature reached normal seven days after admission, and the convalescence from that time was progressive and uneventful.

Cerebrospinal fluid.— Before treatment a few intra- and extracellular diplococci were observed in the smear and a typical growth appeared on blood serum. After one injection no bacteria were found in smear or culture. After two injections no bacteria were seen but the organism grew in culture. Subsequent to that they were not observed in the smears or cultures.

Case XI. Fred V. Age, thirty.

Admitted April 30, 1908, to Dr. Kingman's service.

Patient is a colored man who is said to have been a very heavy drinker. About a year ago he had delirium tremens and just previous to this illness had been on a prolonged debauch. An indefinite history was obtained as patient was boarding. Three days before being admitted it was noticed that he was restless, walking about the room and causing a disturbance. It was thought that he had delirium tremens. When first seen by a physician on April 28 the diagnosis was delirium tremens. He was not seen again until two days later, at which time the doctor sent him into the hospital. On admission he was quite stuporous but occasionally restless. His answers were slow and unreliable. Pupils normal, some nystagmus. Neck stiff and head retracted. Marked Kernig's sign. Patellar reflexes absent. No ankle clonus or Babinski. He received six injections of serum on successive days and the seventh two days after the sixth. There was at first some improvement. After the first injection the temperature dropped from 103° F. to 100° F. In the course of the next week there was a gradual drop of temperature to 99° F. The cerebrospinal fluid improved until at the last puncture it was practically clear. Patient during part of the first week was at times delirious and at times rational. He had some hallucinations. At the end of about a week he a considerable part of the time had a low muttering delirium such as is not uncommon in severe typhoid. About May 8 there developed a coarse muscular tremor along with the delirium and hallucinations. Widal negative. From this time there was no improvement in his condition. The temperature rose from 99° F. on May 7 to 102.5° F. the next day. On the 10th his pulse and respiration began to fail. There was a gradual progressive failure from that time and the temperature rose to 105° F. in the afternoon of May 11, the patient dying that evening, twelve days after admission, on the fifteenth day of his illness.

Cerebrospinal fluid. — Intracellular diplococci were observed in the fluid on April 30. After treatment on May 1 and 2 no bacteria were found in smear, but on both days they grew in culture. May 3, 4, 5 and 6 there were no bacteria either in smear or culture. Fluid in the 5th and 6th was fairly clear.

This patient's habits and past history make it highly probable that alcoholism was an important etiological factor in his delirium and in his death. There seemed some improvement for the first six days in the hospital but subsequently there was progressive failure.

Case XII. Caramela L. Age, six.

Admitted May 8 to the service of Dr. Kingman.

Patient was taken ill suddenly three days before admission, with a chill and vomiting. The next day her neck became stiff and on the day before admission there was some strabismus.

On admission pupils were normal. There was internal strabismus. Herpes on chin. Neck stiff and head retracted. Marked bowing of the back. No eruption. Kernig's sign present and fairly marked on both sides. Patellar reflexes absent. No ankle clonus nor Babinski. Patient was given daily doses of antiserum, 30 ccm. each, for six days, and the seventh dose on the eight day. She was extremely ill, the chief features being delirium and extreme retraction of the head and bowing of the back. There was scarcely any appreciable improvement for four days, although the temperature reached normal three days after admission. At the end of four days she seemed more comfortable but the opisthotonos scarcely diminished for six days. The temperature rose again to 101° F. and 102° F. and reached normal a second time about eleven days after admission. When the patient began to improve, convalescence was fairly rapid and practically without incident. There was no sequelæ. The patient was discharged from the hospital forty-three days after admission completely cured.

Cerebrospinal fluid. — The organism failed to grow in culture from any of the seven punctures. A few intracellular diplococci were observed in the fluid on May 8, from the first puncture. None were subsequently observed in the smear. Fluid was quite clear at the last two punctures.

Case XIII. Leonard S. Pawtucket, R. I. High school student. Age, sixteen.

Patient was first seen on the afternoon of May 8, in consultation with Dr. Richards, of Pawtucket, and Dr. Donley, of Providence. On the morning of May 4 patient had a chill, with some subsequent headache and remained in bed. On the morning of May 5 he complained of pain in his chest, and about ten o'clock vomited. His headache was worse and there was that day noticed some dilatation of the left pupil. No evidence of any paralysis. Temperature, 100.6° F. May 6 there was retention of urine and in the afternoon delirium with marked headache. During that night urine was passed involuntarily. The delirium continued, becoming more active on the morning of May 8. During the afternoon of May 8 patient became more stupid and there was noted stiffness of the neck, dilatation of the left pupil with some paralysis of the motor nerves of the left eye and left ptosis. Knee jerks absent. Kernig's and Babinski's sign present. Respiration about 40. Temperature, 100° F. A few hemorrhagic spots were noted over the chest and abdomen.

Patient received antiserum daily for four days, and the fifth dose forty-eight hours after the fourth. He had to be catheterized from May 8 until May 12, after which he passed urine voluntarily. There were also some involuntary bowel movements. The delirium continued until May 12, after which there were some rational periods. His improvement from that time was progressive, although very gradual. There were intervals of delirium until May 25. The temperature during all of this time was not high, seldom going over 100° F. There was a slight rise of temperature about May 25, wth some general pains. These symptoms subsided without treatment. On June 18 he had been sitting up for an hour or two daily. Was perfectly rational and feeling quite well, although weak. Reflexes practically normal excepting for sluggish knee jerks. The ptosis was less marked and the eyes at casual inspection seemed quite near to normal. Occasionally he would still see distant objects double. Hearing of the left ear was normal, of the right ear considerably impaired.

He came into the office on July 14 reporting gradual improvement in every way. Deafness in the right ear very marked. Left is apparently normal. He rarely sees double excepting when tired; occasionally when he is reading things become a little blurred. Pupils are wide but react normally. The left eyelid occasionally drops a little quicker than the right, but usually they act in unison. Patellar reflexes fairly active.

Cerebrospinal fluid. — The fluid was almost purulent. Intra- and extracellular diplococci were seen on May 8, but these failed to grow in culture. There was no growth at any time from the fluid in this case, nor were bacteria observed after the first puncture. The fluid gradually cleared.

(To be continued.)

As a result of investigation by the health department it has been determined that the present epidemic of typhoid fever in Georgetown, D. C., is due to the milk furnished by a "typhoid carrier" owning a dairy farm near Cabin John Bridge, Md. Thirty-two cases developed within 8 days, of which 28 had consumed milk supplied by the dairy in question. — *Jour. Ad. Mem Asso.*

BURSITIS SUBACROMIALIS, OR PERIARTHRITIS OF THE SHOULDER-JOINT. (SUBDELTOID BURSITIS.)

BY ERNEST AMORY CODMAN, M.D., BOSTON.

(Continued from No. 17, p. 537.)

PATHOLOGY.

I have little that is important to add about the pathology of this condition. My further experience has merely reinforced the experience reported in my previous paper. The only point worth speaking of is this — that the spot on the greater tuberosity where the tendon of the supraspinatus is usually found damaged is that point which acts as a fulcrum on the acromion when the supraspinatus is not doing its work. I am more convinced than ever that partial ruptures at the insertion of this tendon may occur from muscular violence alone during the period of abduction when the burden of overcoming inertia is suddenly thrown on the supraspinatus. Unless this muscle is on the *qui vive* the powerful contraction of the deltoid tends to force the tuberosity to gain a fulcrum on the acromion and this jams the tendinous expansion of the supraspinatus between the two bones. Any one who will take the pains to examine a series of dissecting-room specimens may convince himself of this by the frequent occurrence of a frayed condition at the insertion of the supraspinatus. It is surprising how large a proportion of subjects show evidence of chronic or healed lesions at this point. There will be many instances in a hundred adult subjects of the condition shown in Fig. 9. It is also at this point where the osteophytes of a chronic hypertrophic arthritis cause trouble and gradually work through the base of the bursa, giving the appearance of a normal opening into the true joint or presenting denuded bone on the base of the bursa. Painter and Baer have also reported cases of a deposit of lime salts in the bursa, which is visible in x-ray pictures. I have also seen these cases and believe that the deposits are not in the bursa but beneath its base in the substance of the tendon. I think they are due primarily to chronic inflammatory tissue, which, having little blood supply, undergoes necrosis. The lime salts are then deposited in the necrotic area. Dr. Wright, who has examined a specimen for me, compares the process to one taking place on the heart valves (see Case XXVI).

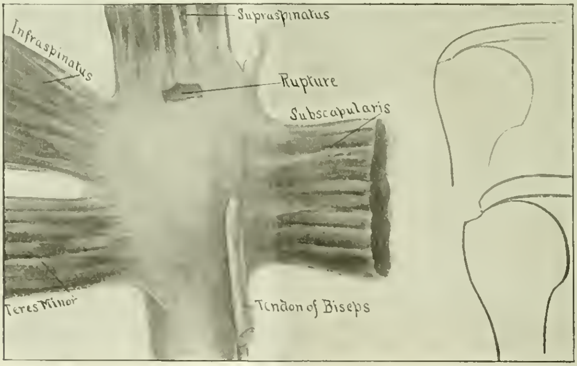

Fig. 9.

This diagram is intended to illustrate the condition found when the tendon of the supraspinatus is torn. The head of the humerus is seen from the outer side with the tendons and portions of the muscular bellies of the short rotators still attached to it. There is a small tear in the tendon of the supraspinatus near its insertion on the greater tuberosity. The rupture is not complete because the Y-shaped expansion of the tendon still holds it in fair position. As explained in the text, this lesion is at the point where the shoulder is most prominent.

In the outline drawings is shown the smooth contour made by the tuberosity and the overlying tendon in normal condition with the irregular contour found when the tendon has been ruptured. Sometimes, instead of rupture of the tendon taking place, the portion of the tuberosity to which it is inserted is torn off.

SYMPTOMS.

In discussing the symptoms of subdeltoid or subacromial bursitis I will speak of the condition as though it were a definite lesion. This is perhaps not an accurate way of treating the subject, because the causes which bring about the lesions of the bursa are varied and more or less modify the symptoms; but whatever the causes, the following three types of inflammation of the subacromial bursa may be more or less clearly defined. They are directly comparable to conditions in other serous membranes. We may speak, for instance, of peritonitis, and describe an acute and an adherent and a chronic type, whether the causes are trauma or chemical and bacterial irritants. Lesions of the subacromial bursa, for purposes of diagnosis and treatment, may be classified as follows:

I. Acute or spasmodic type.
II. Subacute or adherent type.
III. Chronic or non-adherent type.

Symptoms of Type I, the acute or spasmodic *form.* — 1. Localized tenderness on the point of the shoulder, just below the acromion process and to the outer side of the bicipital groove.

2. In a small portion of the cases (those in which no adhesion has as yet taken place and in which the spasm can be overcome), this tender point, being on the base of the bursa, will disappear beneath the acromion when the arm is abducted. When it occurs this sign is almost pathognomonic. (Dawbarn.)

3. When attempts at abduction or external rotation are made, the scapula after a certain point is locked by spasm and moves with the humerus. (Fig. 10.) About 10° of motion can always be obtained without moving the scapula. In mild cases the spasm may be momentary and occur only just as the tender point disappears beneath the acromion or just as it reappears from beneath it in the descent of the abducted arm.

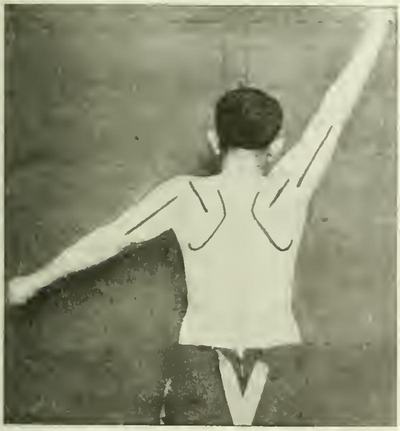

Fig. 10.

Showing the characteristic attitude of a patient with subacromial adhesions or scapulo-humeral spasm when endeavoring to abduct both arms. Abduction on the affected side is mainly accomplished by rotation of the scapula on the chest wall. The angle between the axis of the humerus and the spine of the scapula is practically the same as if the arm were at the side. Notice that on the normal side the axis of the humerus is parallel with the spine of the scapula, while on the affected side it is at right angles to it. On both shoulders the scapula is abducted to its full extent.

4. In certain mild early cases in which there is but little spasm the patient alleges that he cannot, unaided, raise the arm to an abducted position but will allow passive motion. Oftentimes this is not a real inability to abduct and the patient merely means that he cannot raise the arm *without pain.* When the condition is explained to him he generally can abduct the arm. This pain is probably caused by the unwillingness of the supraspinatus to start the pull on its sensitive tendon.

5. Pain is felt either in the region of the point of the shoulder or down the outer side of the arm, even extending into the hand. The patient frequently thinks the trouble is at the insertion of the deltoid; sometimes pain at this point is the only symptom. Pain and discomfort are particularly annoying at night and the patient cannot sleep on the side of the lesion.

6. Occasionally effusion in the bursa is demonstrable and frequently there is puffiness to the touch.

Symptoms of Type II, the subacute or adherent form. — In this type actual adhesion exists between the roof and floor of the bursa and there is an absolute mechanical limitation to abduction and external rotation. There may or may not be active inflammation as well.

1. In this type localized tenderness may or may not be present, according to the degree of existing inflammation. In recent cases it is usually present; in old quiescent cases absent.

2. The Dawbarn sign is absent, for the tuberosity cannot be made to pass under the acromion.

3. Abduction and external rotation of the humerus on the scapula are limited to a greater or less extent, usually so much that the tuberosity will not pass beneath the acromion. The 10° of free motion in which the function of the bursa is not called into play persists. If it does not the true joint is involved.

4. Beyond an arc of about 10° the scapula accompanies the humerus in all its motions whether active or passive. This is best tested by holding the lower angle of the scapula between the surgeon's left thumb and forefinger while the arm is rotated or abducted with the right hand. (See Fig. 10.)

5. The pain is in the same distribution as in Type I, and frequently in the neck also, and in the severe cases it closely resembles brachial neuritis. In some cases it is so severe as to prevent restful sleep, and the general condition of the patient may be severely affected. In others there may be no pain whatever.

6. In severe cases there is sometimes inability to completely extend the elbow.

Symptoms of Type III, the chronic form. — In this type the essential characteristic is painful motion, but the full arc of motion persists. The trouble is due to slight irregularities in the contour of the base of the bursa, usually at the external side of the bicipital groove, so that the motion, instead of being smooth and free, is interrupted in its course as the irregular point passes beneath the acromion.

1. Localized tenderness may or may not be present; it is often absent.

2. If localized tenderness is present the Dawbarn sign is present, because the tender point can pass beneath the acromion.

3. Abduction and external rotation are but little, if any, limited, but at some point during abduction acute tenderness is experienced which disappears as soon as the tuberosity is safely beneath the acromion. In lowering the arm this sensation is again experienced. The patient usually winces, but the pain cannot be called severe. Instead of a smooth even motion there is a sudden change from an obtuse to an acute angle between the scapula and humerus. Sometimes it is very difficult to demonstrate this pain

even when the patient tries to produce it, for it often is elusive, sometimes appearing when the arm is raised, but more often when it is lowered. Usually it is produced by abducting the arm in internal rotation rather than in external rotation. The patient sometimes learns to rotate the arm externally before abducting it when he wishes to raise it. Elevation in the frontal plane is usually easier than in the sagittal plane.

4. The scapula does not accompany the motions of the humerus, but, as said above, the relative motions may be jerky and uneven.

5. There may be considerable pain, especially after use; it is sometimes severe enough to interfere seriously with sleep. The pain is often felt at the insertion of the deltoid or in the neck, as in the other types. Occasionally there is pain only complained of, and the disturbance in motion is overlooked.

In my former paper I described a fourth type — severe traumatic cases. I think this was perhaps a mistake and only leads to confusion, for such cases could probably all be included in the other three types. This class was intended especially to include cases caused by rupture of the supraspinatus tendon or separation of its facets of insertion.

Further experience has convinced me that this is a common cause of subacromial bursitis. The rupture is rarely complete owing to the broad expansion of the tendon over the tuberosity. The serous base of the bursa over it may not even be torn, although so close to it as to be involved in the process of repair and to have its contour modified by the loss of substance. Once the contour is modified, friction may occur when the acromion becomes a fulcrum. I believe that such rupture of the tendon may be due to muscular violence alone, as in fractures of the patella, or to direct violence on the point of the shoulder. Extreme degrees of this where the infraspinatus is also involved lead, I believe, to recurrent dislocation of the shoulder, because these muscles are needed to prevent the subscapularis from pulling the head of the humerus out of place.

DIAGNOSIS.

In my former paper I did not take up the detailed differential diagnosis from other lesions in this region. I will take them up briefly now.

Tuberculosis. — The early stages of tuberculosis of the head of the humerus are very difficult to differentiate, for its characteristic method of invasion is around the anatomical neck of the bone so that the insertions of the short rotators are involved and fixation produced similar to that of inflammation of the bursa. In fact, I believe the bursa itself is early involved. In three cases of tuberculosis of the head of the humerus, which I have excised, the bursa was involved. Fortunately the x-ray appearance in tuberculous invasion is characteristic, and in subdeltoid bursitis is normal, except where there is a deposit of lime. Besides this crucial test, the atrophy of the muscles and the fixation are more pronounced, the 10° which always are free in subdeltoid bursitis being sometimes, though not always, lost in tuberculosis. Fluctuation may sometimes be obtained below the acromion behind or over the bicipital groove. Tuberculin may be used.

The following case illustrates the difficulty in diagnosis:

H. G. Age twenty-two. Greek. Came to Massachusetts General Hospital on June 19, 1906, complaining that his left shoulder was stiff but not painful. On May 4, 1906, he had been riding a bicycle and collided with a car. Was unconscious for a time and was taken to the Boston City Hospital. He was kept there a week. No treatment was given the arm, but an x-ray was taken which was negative. The arm was swollen but not painful until the third day. (The above history was obtained from the patient's friends.)

Examination. — Rather anemic, poorly nourished young Greek. Slight thickening over head of left humerus. No local tenderness. Decided atrophy of spinati and deltoid. Motion in abduction and external rotation only one third less than normal and perfectly painless.

As tuberculosis was suspected on account of the unusual degree of atrophy, an x-ray was taken which showed a slight shadow in close relation with the upper part of the greater tuberosity. This I supposed to be due to deposit of new bone in the periosteum which had been displaced slightly by the injury. This doubtful appearance in the x-ray and the persistence of such a large arc of motion decided me in the diagnosis of subdeltoid bursitis and accordingly, on June 22, 1906, ether was given, the adhesions readily broken up and the arm fixed on an abduction splint. Recovery was uneventful, with very little pain, and on Aug. 30, the arc of motion was normal except for very slight limitation of external rotation. By this time he had returned to his work and was working eleven hours a day in a rubber factory.

On Sept. 12, 1906, he returned to the hospital with a well-developed secondary syphilitic eruption and complained of pain in the shoulder. Another x-ray showed the characteristic appearance of tuberculous erosion of the anatomical neck of the humerus. Since that date he has disappeared from observation. I have no doubt that the ill-judged manipulation, although temporarily beneficial, was really harmful.

Fractures of the tuberosity and of the anatomical and surgical neck might be confused, but the x-ray here also gives a crucial test. Such fractures nearly always show ecchymosis and swelling down the inner side of the arm, while the first examination in cases of traumatic subdeltoid bursitis is often negative. We must not forget that subdeltoid adhesions are a frequent late complication of such fractures. In some cases they are equivalent to evulsion of the facets of insertion of the supra- and infra-spinatus. Painter has called attention to the fact that in certain cases there is a calcareous deposit in the bursa which may be confused with a fractured tuberosity by its x-ray appearance. In some traumatic cases the periosteum in this region may be lifted and the superficial bone which is then formed appears to be in the bursa in the x-ray. It is really beneath it. (Cf. Cases XXV and XXVI.)

Deep axillary abscess. — At first sight it seems hardly possible to confuse this condition with subacromial inflammation, but I have several times known the mistake to be made. When such abscesses are small and high under the pectoralis major their most marked symptom is fixation of the shoulder-joint. Careful examination will show, however, that the point of maximum tenderness is under the pectoralis major instead of at the point of the shoulder, and an examination high in the axilla reveals induration.

Muscular rheumatism is one of the common diagnoses which are given to this condition but one which need hardly be considered when a real effort at detailed diagnosis is made. The term "muscular rheumatism" is commonly used to describe any vague pain in a muscle or a group of muscles. It is even more general than the term "inflammation of the bowels" used to be, and should, like the latter, pass out of use. True muscular rheumatism in my experience is now a rare disease, because group after group of more clearly-defined clinical entities have been taken away from it. Just as we have learned that most cases of lumbago are due to pelvic disease, hypertrophic arthritis of the spine or loose sacro-iliac synchondroses, so we are now find that muscular rheumatism of the deltoid is due to pressure neuritis of the brachial plexus, subacromial bursitis, etc. When other lesions are differentiated there are few which may be called muscular rheumatism, and these have none of the subdeltoid symptoms except pain. I doubt if localized muscular rheumatism is ever persistent. "Muscular rheumatism" is a very convenient term to give to a pain of the cause of which we are uncertain, but when I use it, I confess to an admission of ignorance.

Chronic rheumatic conditions. — Goldthwait's classification of what used to be called chronic rheumatism into three general divisions, atrophic, hypertrophic and infectious arthritis, seems to me a long step in the right direction. The more I see of shoulders and other joints the more readily do they fall into one or the other of these three divisions, although, of course, borderline cases occur which appear to be mixtures of these types. These chronic rheumatic conditions may cause disturbance of the bursa and its functional consequences as well as other forms of inflammation. As I have mentioned above, it is a mistake to think that subacromial bursitis is a distinct disease. The object of my former paper and of this paper has been to call attention to the anatomical importance of the subacromial bursa rather than to call attention to any new disease. I think, however, that, owing to the simple anatomical structure of the true shoulder-joint, these forms of disease are less likely to attack it than other joints in the body, such as the knee, where the articulation is much more complex. The first two of these three forms of "rheumatic" disease are particularly prone to affect the cartilage and the joint structures at the edge of the cartilage. Owing to the anatomical simplicity of the shoulder-joint, malformation at the edge of the cartilage would cause less mechanical interference than in any other joint, for the ligaments are of small importance and the joint is really made up of the short rotators which hang the humerus from the scapula. For these reasons hypertrophic arthritis is relatively rare in the shoulder-joint, but does undoubtedly account for a certain number of the cases with pronounced subacromial symptoms. (Case XXIII.) Of the three forms, the atrophic type is the less likely to be confused with subacromial bursitis because this disease is more truly a disease of the joint cartilage itself, and in the only case I have had the opportunity to study carefully the symptoms characteristic of inflammation of the true joint were most pronounced. These symptoms are: localized tenderness (more pronounced high in the axilla than under the acromion); more complete loss of motion; a more obtuse angle between the scapula and the shaft of the humerus, when fixation occurs.

In the following case I confused the diagnosis at first, but the failure of treatment, directed toward subacromial adhesions, drew my attention to my mistake. The following is a brief report of a case. It is quite possible that this may have been a case of infectious arthritis rather than true atrophic arthritis, cases of which usually show more typical involvement of the smaller joints.

Adherent case in obese anemic woman. Both shoulders involved. Mistake in diagnosis, the true joint being involved instead of the bursa. Duration, six months when first seen.

Treatment. — One shoulder, manipulation under ether and fixation in abduction. No treatment to the other shoulder.

Result. — No improvement from operation. Local treatment abandoned and patient sent to country for constitutional treatment.

Recovery after one year. — Untreated arm recovered before the one which was manipulated.

Mrs. M. H., forty-eight years. Married. Massachusetts General Hospital.

Previous history negative until January, 1906, when she began to notice limitations of the motions of the shoulder-joints. There was also some loss of motion in the knee-joints. She became much run down, pale and sallow and felt weak. There was not much pain in the shoulder-joints except when she made attempts to use the arms. She could attribute the onset of the stiffness to no cause. She had not had grippe or any other infectious disease, nor had she been rheumatic in the past.

In the latter part of March, 1906, she began treatment with the Zander apparatus under the direction of Dr. Böehm. On May 24, as there had been no material improvement, Dr. Böehm gave primary ether and broke up the adhesions in the shoulder-joint, but stiffness immediately returned and, although the Zander treatments were continued up to the 12th of June, there was no further improvement. At this time she came under my charge, having had in all thirty-seven treatments with the Zander apparatus.

Examination. — Very stout pale-looking woman with flabby condition of the skin, suggesting some loss of weight, although patient looks exhausted from having lost much sleep. She is not of a nervous disposition and is courageous rather than otherwise. Both shoulders show marked atrophy of the spinati. There is little tenderness about the shoulders and no pain except when the arms are moved. When there is pain it is not definitely localized, but in the whole shoulder. The right shoulder is practically ankylosed, for there is no demonstrable motion, although there is enough "give" to make it certain that there is no bony ankylosis. In the left shoulder there is about ten degrees of motion. *Both shoulders stand at an obtuse angle with* the scapula, i. e., 120° between the spine of the scapula and the axis of the humerus. It is impossible to demonstrate rotation on either side. There is great pain if forcible efforts to rotate or abduct the humerus are attempted. Owing to the inability of the patient to use the arm, she is practically incapacitated. She cannot dress herself or even feed herself properly. She has lost sleep at night because she cannot obtain a comfortable position. The x-ray shows acute bone atrophy of the head of the humerus. The bony surfaces in the shoulder-joint are abnormally close together, showing a loss of articular cartilage.

On July 1, under ether, I broke up the adhesions in the right arm. Even under ether the right arm was practically ankylosed to the scapula, the usual ten degrees of free motion being absent. The left arm was not manipulated because of the great incapacity that would be caused by temporarily increasing the soreness of both shoulders. No incision was made. After the operation the right arm was kept on an abduction splint for several days. The result was at first encouraging, but there was more than usual difficulty with the splint as the stoutness of the patient made it most difficult to apply it.

She was discharged from the hospital on the 7th of July. The arc of motion was considerably increased, but showed a tendency during the next two weeks to relapse in spite of using the splint for an hour daily. On July 18, I desisted from using the splint because there was so much pain and because the left arm seemed to gain faster than the one which had received treatment. The patient's general condition was so poor that I felt it would be wiser to abandon direct treatment to the shoulder and do what I could by general hygienic measures. She was given a tonic and went to stay with friends in the country and returned occasionally for observation. Improvement was manifest after a month, both in her general condition and in her shoulders, as far as pain and tenderness were concerned. The left arm, which had not been operated on, gained faster than the right, which on Aug. 25 was noted as still ankylosed.

During the following winter I lost sight of the patient, but examined her again on March 6, 1908. She informed me that her general condition improved gradually during the summer of 1906, although the shoulders remained stiff. She returned from the country about the 15th of September. Slow improvement in the shoulders continued during the fall and winter. Pain at night continued until January, 1907. She could not dress herself, clasp her hands over her head or behind her back until March, 1907, and did not regain what she considered satisfactory motion of her arms until the following summer, i.e., a year and a half from the date of onset and one year from the date of her operation.

At the present time, March 6, 1908, she is a ruddy, healthy-looking woman, and has what she considers normal use of her arms except that occasionally there is slight pain in the right shoulder after unusual use. Examination shows that she can elevate both arms to practically their full extent, i. e., 175°. With the arm at the side (i.e., in adduction), complete external rotation is not possible, but when the arm is abducted full external rotation is possible.

This case was an improper one for manipulation under ether or for the Zander motions. The limitation was due to spasm from acute atrophy of the true joint. General hygienic treatment was far more efficacious than local treatment. The ankylosis at an obtuse angle and the lack of a few degrees of free motion should have ruled out subacromial bursitis.

The hypertrophic type may be a cause of subacromial bursitis, because exostoses either on the tuberosity or on the acromion may lead to mechanical irritation of the bursa. I have seen a number of cases of this kind and operated on one case which showed when the bursa was opened that an exostosis actually bare of periosteum lay in the base of the bursa. (Case XXIII.)

What Goldthwait has called infectious arthritis, meaning a joint irritation (due either to the presence of organisms or their toxic products absorbed from other regions of the body, as the tonsils, gastro-intestinal tract, etc.), and not severe enough to cause suppuration, is a common cause of subacromial bursitis. I believe that such infectious conditions more commonly affect the bursa than they do the true joint, for the reasons alluded to in my former paper, i. e., that the bursa is less well protected and less well constructed to meet ordinary mechanical strains, and for this reason it would be more easily attacked by local irritants.

Acromio-clavicular arthritis. — A number of cases have come to my notice where this condition has produced symptoms somewhat similar to those of subacromial bursitis of the third type. A careful examination reveals the fact that there is localized tenderness at the acromio-clavicular articulation; or if the case is traumatic, possibly a subluxation. There is usually a decided thickening about the articulation of the acromion with the clavicle.

Circumflex paralysis. — Before we came to make careful diagnoses of pathologic conditions of the shoulder, many cases were classed as circumflex paralysis. I think that many such diagnoses were made because the patient could not, or alleged that he could not, abduct the arm. In seeing quite a large number of shoulder cases, with careful attention to this point, I have come to the conclusion that pure circumflex paralysis is really quite rare. It may be at once recognized, if present, by the absence of the contraction of the fibers of the deltoid when the effort to raise the arm is made. The deltoid in many of the shoulder cases which we have been discussing is much atrophied, but when the patient makes an honest effort to raise the arm, even though he does not succeed in raising it, the deltoid may be felt to contract under the palpating fingers. As I have said before, many cases that have been supposed to be due to paralysis of the deltoid, I am quite certain are due to a loss of function of the supraspinatus, without the aid of which the deltoid has little power.

Inflammation of the sheath of the biceps tendon. — In my former paper I spoke of the fact that the biceps tendon is remarkably well protected from trauma. It lies beneath the base of the subdeltoid bursa and beneath the tendinous expansion of the supraspinatus. Direct trauma must first injure these structures. The muscular belly of the biceps forms an elastic protection against indirect trauma. I believe that it would take a very violent trauma to dislodge the biceps tendon in the slightest from the groove. Such a lesion would involve the complete rupture of the muscular capsule of the joint. Occasionally as Monks has shown, the tendon may be torn from its attachment to the scapula, but the symptom produced by this is a change in the shape of the biceps muscle when contracted and not an inflammatory condition of the shoulder-joint. Possibly inflammation of the sheath of this tendon may produce symptoms closely similating those of inflammation of the subdeltoid bursa. I confess that I do not feel absolutely satisfied that some of the subacute cases are not due to this condition. Very likely in such conditions as the "glass arm" in baseball players, the inflammation of this serous sheath has some importance as well as that of the bursa. As I have said under the head of Anatomy, the sheath of the biceps tendon is functional in motions of the humerus on the scapula rather than in the motion of the biceps muscle. *Therefore, all motions of the humerus, whether abduction or external rotation, involve the motion of the tendon in its sheath.* We can readily imagine that many of the same symptoms might be produced by inflammation of this sheath as by inflammation of the subacromial bursa. The localized tenderness is sometimes very close to the long head of the biceps, so that it is difficult to say whether it is actually in the groove or on the tuberosity. It is the accurate localization which would influence me in the differentiating, Then, too, simple forward and backward motions on the scapula calls vigorously into play the biceps sheath, while the subacromial bursa is less prominent in this function. In most cases of subacromial bursitis this forward and back motion is the most free of any. Since these two serous spaces are only separated by the expansion of the supraspinatus tendon, it is highly probable that on some occasions inflammation may involve both. They do not communicate directly, but their lymphatic connection must always be very intimate. The presence of 10° of painless motion is much against the presence of inflammation of the biceps tendon sheath.

Brachial neuritis. — Of all the conditions which are difficult to differentiate, brachial neuritis is, perhaps, the most difficult. It is my opinion that most cases are due primarily to a lesion of the bursa. In the acute cases, and the adherent cases without pain, there is no difficulty, but in the adherent cases, where there is still active inflammation and extreme pain, the diagnosis is very difficult. I am not sure but that the fairest way is to say that subdeltoid bursitis is the most common cause of brachial neuritis. There are, however, a number of points which indicate that this is at least not a typical brachial neuritis. In the first place, the pain is not felt definitely on the known anatomical courses of the branches of the brachial plexus. There is seldom any considerable degree of tenderness on the nerve trunks and, on the other hand, the diffuse tenderness is usually on the bands of intermuscular fascia rather than the nerve trunks. In chronic cases, where the motions of the bursa are very painful at certain points, those points correspond with the degree of motion at which the tuberosity comes closest to the acromion, that is, when an angle of 130° between the shaft of the humerus and the spine of the scapula is reached. Then, too, treatment in these cases when directed to the bursa has produced very gratifying results. Possibly the same treatment which relaxes the structures of the shoulder-joint also relaxes the brachial plexus, and in this way improvement might be brought about. Personally, I am inclined to think that the analogy of a cinder in the eye offers a better explanation of the sequence of symptoms. We all know that a small cinder in the cornea prevents smooth action of the lid over the eyeball. Every time there is motion of either, there is irritation. We know there exists a reflex whereby this irritant causes the desire to shut the eye. There is also a reflex leading to increased blood supply and hyperemia of the conjunctiva. The secretions of the lachrymal glands are increased, and there is an exudate of fibrin which glues the lids, and eventually there are intense pain and swelling all over the affected side of the face and head, and the whole plexus of the adjacent nerves becomes tender and inflamed. An irritation of the surfaces of the subdeltoid bursa is similar in its effects to a cinder in the eye and starts a train of reflexes which fix the joint and cause pain through the whole arm.

If one considers the remarkably beautiful sequence of muscular action by which the arm is elevated to its full extent, it is easy to see that a painful irregularity of the surface of the base of the bursa may interrupt the whole chain of reflexes. One must bear in mind, too, the existence of the nerves of position-sense, which tell us in what position our arm is in at any given moment and make possible for us the finer motions of the arm such as those involved in painting, piano playing or sewing. The subacromial bursa must be well supplied with these nerves, and nothing is more natural than that when it is inflamed pain should be felt in the sensory distribution so intimately associated with them in their normal function. Such inflammation, too, immediately produces a reflex inhibition of the use of the bursa, for the normal sequence of muscular action is replaced by scapulo-humeral spasm which protects the bursa.

If one grants the proposition that the activity of the supraspinatus is essential in normal movement of the shoulder, it is not difficult to see that a rupture from trauma, synovitis from over use, the irritation of an osteophyte or a bacterial infection of its tendon of insertion changes at once the normal sequence of motion and produces instead scapulo-humeral spasm. I wish to impress upon the reader that interference with this tendon of insertion involves the base of the bursa and *vice versa*, so that disturbance of one is apt to produce disturbance of the other. There is, therefore, on the point of the shoulder an area, not much larger than the finger tip, which is so intimately associated with the nerves of the position-sense and the adjacent motor and sensory nerves that lesions affecting it change the normal adjustments of the shoulder motions to scapulo-humeral spasm and pain in associated sensory nerve paths.

(To be continued.)

Medical Progress.

RECENT PROGRESS IN OPHTHALMOLOGY.

BY
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AND
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DISEASES OF THE EYE RESULTING FROM AFFECTIONS OF THE ACCESSORY SINUSES.

Much work has been done the past year calling attention to the connection between affections of the accessory sinuses and diseases of the eye and orbit. Birch-Hirschfeld [1] has collected 684 cases of orbital inflammation, of which 409 (cir. 60%) depended on inflammations in neighboring cavities, and this percentage is not too high, as the sinuses were not investigated in every case. Of these, frontal sinus accounted for 30%, antrum 22%, ethmoid 20%, sphenoid 6%, while in 15% more than one sinus was involved.

The primary cause was in nearly every instance an empyema of the sinus following rhinitis, influenza, pneumonia, scarlet fever, diphtheria or traumatism. Mucocele of frontal sinus in some cases displaced the eyeball and endangered sight without causing orbital inflammation. Usually a purulent infection of a mucous membrane lined cavity leads to ostitis, caries and necrosis, and breaks directly into the orbit, or infection follows, where the periosteum is poorly developed, through some natural opening or along a blood vessel (thrombo- or periphlebitis) through the bony wall. There follows a periostitis of the orbit, orbital abscess or orbital phlegmon. A subperiosteal abscess may work backwards or may point at the orbital margin and be evacuated through the lids or conjunctiva. Inflammation of the retrobulbar tissue gives either an encapsulated abscess or a thrombo-phlebitis. The author has found spaces, probably lymph channels, in the fatty tissue and connective tissue septa of the orbit which serve for the extension of the infection. Retrobulbar phlegmon causes marked protrusion and immobility of the eyeball, with chemosis of the conjunctiva and edema of the lids. In diagnosis a tenderness in the supra-orbital fossa points to frontal sinusitis; tenderness of the inner wall of orbit suggests ethmoid infection; tenderness over frontal process of superior maxilla, an empyema of the antrum. When the posterior sinuses are involved pain on motion of eyeball or tenderness of ball on pressure are valuable signs. The author cites central color scotoma in 3 cases where posterior sinuses were affected, and he has found 8 others recorded. Besides direct extension of the inflammation to the eyeball, the most serious consequences come from optic neuritis, optic atrophy, thrombosis of retinal veins, separation of retina and retinal hemorrhages. Eighteen cases had purulent corneal ulcer, 8 cases had panophthalmitis and 2, glaucoma. Loss of vision was final result in 66 cases (16%). Death occurred in 52 cases. The author speaks for early and large incision through the lid and stripping up the periosteum even before pus can be definitely ascertained to be present.

But sinus disease can work much harm to the eye even when there is no extension of infection directly. Sauvineau [2] reports paresis of internal rectus, superior oblique and accommodation from frontal sinusitis, and external and internal ophthalmoplegia from sphenoidal sinus disease. Mason [3] attributes some cases of uveitis to pus in sinuses and reports 2 cases not relieved until sinus disease was cured. A. Knapp [4] reports optic neuritis after disease of posterior ethmoid cells. Fish [5] collects 136 cases of primary and secondary optic neuritis connected with sinus disease. The nasal passages, the frontal ethmoid, maxillary and sphenoid sinuses can each cause optic neuritis. In several instances there was bilateral optic neuritis, dizziness, pain in the head and vomiting, leading to the diagnosis of cerebral tumor. Optic neuritis in convalescence or after acute infectious fevers should always lead to an examination of the sinuses, as the cause is often found here. Murray reports a typical case with severe headache, vertigo, vomiting and digestive disturbance with one-sided optic neuritis. The frontal, anterior ethmoid and maxillary showed chronic involvement. In this case, as in most of the others, the vision was much reduced but became normal shortly after the operation on the sinuses. Sinus disease may cause optic neuritis in different ways: the posterior ethmoid and sphenoid are in close relation to the nerve and show much variation in conformation. In cases where the optic canal is connected with the ethmoid cells the septum is thin as paper. Fissures in the optic canal and in the side wall of the sphenoid cavity are frequent and would account for some cases.

PULSATING EXOPHTHALMOS.

E. E. Jack [6] reports a case of pulsating exophthalmos from aneurysm of right internal carotid perforating into cavernous sinus. The common carotid was tied, but death followed in four weeks. H. Gifford [7] treated a case which followed injury in which ligation of external carotid and then internal carotid has been in vain. Finally the tumor in the orbit, which consisted of a vein much dilated and filled with solid blood, was dissected out, with relief to the condition. Blanco [8] reports a case cured by ligation of common carotid.

PARAFFINE SPHERES IN TENON'S CAPSULE.

Spratt [9] adds 17 more operations of putting a paraffine sphere in Tenon's capsule after enucleation to his 23 previously reported. In the new list is one failure from extrusion in an old man. The paraffine is filtered, steam sterilized and molded into spheres half an inch in diameter.

At the enucleation the muscles are slightly dissected from the surrounding tissue and the superior and inferior sutured over the paraffine ball, then the two lateral muscles. Tenon's capsule is closed by a purse-string suture and the conjunctiva also brought in by a purse string. Rather a firm pressure bandage is used to lessen the chemosis, which may last a week. Failures arise from sepsis, too large spheres, improper closure of the wound or too soft paraffine.

OPHTHALMO-TUBERCULIN REACTION.

Numerous reports are published on the ophthalmo-reaction first suggested by Wolff-Eisner, who used a 10% solution of tuberculin. Calmette introduced the present method of making the test: One drop of a 1% solution of tuberculin is placed on the conjunctiva of the lower lid and allowed to flow over the surface undisturbed by rubbing. The reaction occurs in three to thirty hours, — average, eighteen to twenty-four hours, — and varies from slight reddening of the semilunar fold and caruncle to a marked congestion of conjunctiva of globe and lids, especially of the lower cul-de-sac, and even to a chemosis of the conjunctiva with fibroserous or mucopurulent secretion. The severity of the reaction bears no relation to the extent or location of the tuberculosis. The reaction is usually gone in four days or sooner, but may last ten days. In the last week of life no reaction can be obtained and in general the reaction occurs more readily in mild cases than in severe ones. This reaction is used as a test for tuberculosis anywhere in the body, but has been often tried in suspected lesions of one eye: used in the well eye. The reaction has considerable value and these conclusions seem justified by the consensus of opinion. (1) Using a 1% solution a positive reaction shows great probability of tuberculosis. (2) Negative result does not mean absence of tuberculosis, but by using a stronger solution (up to 4%), reaction will be obtained in nearly every case of tuberculosis. We need more experimentation on non-tubercular cases in order to determine the limits of the reaction.

Some unfortunate effects have been reported: an occasional tendency to exaggerate an existing conjunctivitis or to bring on a phlyctenular conjunctivitis. A. Knapp reports typical tubercular interstitial keratitis in a previously healthy eye. Six hours after drop was instilled the eye was congested, lids red and swollen and in ten days corneal infiltrates appeared. Barbier mentions keratitis in a child ending in nearly complete blindness. Renon also reports interstitial keratitis as well as ulcer of the cornea. Several writers report phlyctenular ulcers of the cornea. Ramsey records a case of girl twelve years who had one drop of 1% tuberculin instilled into her left eye which, except for a slight nebula, was normal. Within twenty-four hours there was an inflammation which progressed to the formation of a central ulcer with vessel formation in the cornea. After healing a considerable opacity remained which impaired the vision seriously.

Posey [10] says many cases of interstitial keratitis not of syphilitic origin may be tubercular. Tubercular nodules with giant cells and bacilli have been found in the cornea. Bach distinguishes (1) parenchymatous type, attributed to action of tuberculous toxins; (2) sclerosing type, attributed to tubercular disease of the pectinate ligament; keratitis of the margin, unassociated with tubercular disease of iris or pectinate ligament; corneal affections secondary to tuberculosis of the conjunctiva. The projection of a tonguelike area of yellowish-white infiltrate from the limbus into the interstitial lamellæ of the cornea, and the occurrence of yellow-white discreet oval areas which appear caseous and avascular, is significant of tubercular keratitis. Secondary to tubercle of the iris he has seen the deposition of small round spots resembling cold mutton fat in the cornea or on its posterior surface.

OCULAR MANIFESTATIONS OF GONORRHEA.

A study of the ocular manifestations of systemic gonorrhea by Byers,[11] reviewed by Shoemaker, presents the following conclusions: There are certainly metastatic affections of the eye from this disease, iritis has long been recognized and metastatic conjunctivitis occurs. Metastatic inflammations of the eye are characterized by uncertainty and irregularity in time of occurrence, extent of parts involved, severity of symptoms and course; they have a marked tendency to relapse and to recur with new attacks of gonorrhea. Ocular inflammations may be the sole expression of a systematic infection. Metastatic conjunctivitis occurs at any time in the course of a systemic gonorrhea but often as an initial symptom. It is usually bilateral. A keratitis, superficial, symmetrical, central in situation, occurs.

A deep-seated congestion sometimes found in the metastatic conjunctivitis may be a manifestation of an inflammation of the anterior structures of the globe. The iritis may be an iridocyclitis and is not uncommon. Metastatic inflammations of the optic nerve and retina are in the form of a diffuse neuro-retinitis with at times retinal edema. Dacryo-adenitis has been attributed to this same cause, is usually bilateral and ends in resolution.

Hansell [12] discusses the same subject and thinks that perhaps 10% or 15% of cases of iritis may be gonorrheal.

SUBCONJUNCTIVAL INJECTIONS OF AIR.

Subconjunctival injections of sterilized air are discussed by Frenkel.[13] They are harmless, the technic is simple, affections of the anterior part of the globe are most affected by them as corneal processes and episcleritis. The author claims remarkably good results in the treatment of phlyctenular kerato-conjunctivitis, abscess and central ulcer of the cornea and old ulceration with pannus. The injections lessen pain, photophobia, lachrymation and blepharospasm and aid other therapeutic measures. Caralt claims great value for subconjunctival air injections in hastening the absorption of subconjunctival ecchymoses.

Subconjunctival injections of medicaments in general seem to be going out of use; when anything is used it is usually physiological salt solution.

Würdemann[14] treats optic atrophy consecutive to neuritis and neuro-retinitis by mechanical and digital massage and galvanic and faradic current. Treatment daily for one month, then tri-weekly, for one of two years. He has seen visual acuity increase and fields enlarge and the nerve take on a more healthy appearance under this treatment.

WÜRDEMANN'S TRANSILLUMINATOR.

Würdemann's[15] transilluminator has proved itself of great use in routine examination of the eye. The instrument is light, gives a powerful illumination from a small area and does not get hot, so that it can be applied to the cocainized globe and held there so as to transilluminate the interior. Used for oblique illumination, minute foreign bodies, abrasions of the cornea, pigment spots and deposits on the back of the cornea are seen easily, and small maculæ are found perhaps better than in any other way. For examination of the circumlental space in glaucoma, for intra-ocular tumors, for retinal and chorioidal detachment and for pathological detachment and for pathological changes in the iris tissue and lens it is extremely valuable. It is recommended in operations for cutting membranes in the pupil and discission of cataract.

ARGYROSIS.

Numerous instances of argyrosis of the conjunctiva after the use of the newer silver salts are given. Mild degrees of this, especially after the the use of argyrol, usually bleach out; more intense discoloration may be permanent. It occurs only after several weeks' use of the solutions. Argyrol and protargol used as injections into the lacrymal sac or for washing out small cavities about the lids have led to brown or even nearly black staining of the skin. This has occurred when the solution has got into the subcutaneous tissue. These stains fade out sometimes perfectly, but may leave indelible discoloration of the lid. Iodide of potassium internally and locally is of slight service.

Guillery[16] has done much important laboratory and some clinical work on dissolving metallic precipitates and other undesirable chemical combinations in the tissues. He found that the opacity caused by lime in the cornea is due to a deposit of albuminate of calcium and this is soluble in ammonium chloride solution. The human eye will tolerate a 6% to 20% solution without bad result. A rabbit's eye with a dense white opacity from lime burn was cleared up by repeated immersions in ammonium chloride solution. An almost entirely opaque cornea of a man was treated with daily baths in a 2% solution and this increased to 20%, with a very satisfactory result. The author found two conditions must be distinguished: tissue changed by the injury, and lime in form of carbonate free and in combination with the tissues. One-tenth per cent tartaric acid added to the ammonium chloride solution makes it more effective. Argyrosis can be removed by a 10% solution of thiosulphate of sodium. The author reports on lead, sulphate copper, nitrate of silver, corrosive sublimate, lime, hydrates of potassium and sodium and ammonia.

OCULAR SYMPTOMS IN CEREBROSPINAL MENINGITIS.

Dow[17] noted ocular symptoms in an epidemic of cerebrospinal meningitis amounting to 183 cases. In the irritative stage during delirium pupil is contracted; in stage of coma, dilated. Inequality of pupil is frequent in all stages; response to light is sluggish. An irregular form of hippus is often present, viz., an almost rhythmic contraction and dilatation of 10 or 15 times a minute. Strabismus occurs at any stage, due to pressure rather than to central lesion of nerve as it varies from day to day. Nystagmus, both horizontal and vertical, is common in acute cases and rare in chronic ones. In chronic cases with hydrocephalus a spasmodic retraction of upper eyelids with hippus and irregular nystagmus occurred. Ptosis was not observed. Conjunctival hemorrhage happened only in 6 cases. Acute cases had diffuse redness of conjunctiva and rarely purulent conjunctivitis and corneal ulceration. In 40 cases optic neuritis was found when chronic hydrocephalus was present, but not at any other stage.

REMOVAL OF THE LACHRYMAL SAC.

Elliot[18] gives notes on 310 consecutive operations for the removal of the lachrymal sac. Indications in the presence of obstruction of dacryocystitis are (1) dilatation of sac; (2) purulent contents; (3) previous abscess of sac with persistent stricture; (4) long-standing obstruction with inability or unwillingness of patient to stand a long course of probing; (5) the presence of an indication for operation on the globe; (6) presence of septic ulcer on the eye; (7) any factor which increases the liability of the patient to eye injury. (8) Double lachrymal obstruction with past or present mischief in one cornea is strong indication for removal of both sacs. The only cases where the author advises conservative treatment are: (1) absence of inflammatory or structural changes in the passages; (2) time, courage and means on the part of the patient.

Define the internal palpebral ligament by pulling the lids outward, — the lower border of this is the upper limit of the incision. Cut down and out from here following the anterior lip of the lachrymal groove, making a crescentic incision. Average length of incision in the 310 cases was 20 mm. Lips of wound held apart with retractors, and the fascia which closes the lachrymal groove cut, then the sac separated from the bone internally and posteriorly. Next the dome of the sac is seized with fine forceps and drawn firmly downward and freed from attachments without cutting the internal ligament. The sac is followed as far as possible into the nasal duct and cut out;

a large probe (9 Theobald) is forced down the duct and a red-hot spindle-shaped cautery is boldly pushed down the duct. If any sac has been left there the dome of the cavity may be cauterized. Sutures and pad and bandage complete the operation. Stitches taken out on the the seventh day. Hemorrhage treated with adrenalin chloride or bleeding points touched with red-hot cautery.

Acute abscess may be incised and washed out daily, and in a month, when inflammation has subsided, the sac may be removed When repeated attacks have matted the tissues, recognition of the sac may be difficult, but by cutting boldly down on the anterior crest of the lachrymal groove and separating the tissues from the bone, the thickened sac wall will surely be found, and if seized the rest of the sac can be cut out with the surrounding tissue. Paraffine injections to define the sac are not necessary. The average time taken for each operation was twelve minutes. The fascia which closes in the lachrymal groove was a dense definite membrane in 78.6%, and so thin as to be unrecognizable in 11%. The sac was thick walled in 77%. It was adherent to surrounding parts in 91%. In 71% of the operations the sac was removed entire. Carious bone was found in 46% of cases. Primary union failed or wound subsequently broke down in 2.6%. Pathological examination of a large number of sacs showed no single case of tuberculosis, but did show well-formed follicles in a number of cases. In a large number of cases the excessive lachrymal secretion is permanently diminished.

NIGHT BLINDNESS.

Parsons [19] classifies night blindness as follows: (1) Pigmentary degeneration of the retina. (Besides the usual signs, the author says the ring scotoma is often incomplete; there are spots in the ring where vision is preserved.) (2) Chronic hereditary night blindness, which is stationary and shows no gross changes in the fundus. In one family, in ten generations, in 2,121 members, 135 were night blind. (3) Syphilitic night blindness, a specific chorio-retinitis, may progress and then become stationary. (4) Various acute forms of night blindness, depending mostly on mal-nutrition, and many cases associated with xerosis conjunctivæ. This combination of symptoms is not invariable. This form occurs in poorly nourished children, sailors, soldiers, inmates of prisons and almshouses, etc., and is common now only in Russia and India, especially in times of famine. Ulthoff found 5% in 500 cases of severe alcoholism who suffered from night blindness or xerosis or both. (5) In severe cases of jaundice, night blindness is not uncommon and occasionally pigmentary changes have been found in the retina.

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Reports of Societies.

THE AMERICAN THERAPEUTIC SOCIETY.

NINTH ANNUAL MEETING, HELD IN PHILADELPHIA PA., MAY 7, 8 AND 9, 1908.

JOHN V. SHOEMAKER, M.D., president.

THURSDAY, MAY 7.

The address of welcome was made by the Mayor of Philadelphia, HON. JOHN E. REYBURN, and the response by HON. HENRY F. WALTON, president of the Medico-Chirurgical College, of Philadelphia. An

OBITUARY OF DR. JOHN S. MCLAIN

of Washington, D. C., treasurer of the society from its inception until the time of his death, June, 1907, was read by the secretary, DR. NOBLE P. BARNES.

The address of the President, DR. JOHN V. SHOEMAKER, Philadelphia, was on

THERAPEUTICS IN THE LIGHT OF ECOLOGY.

Therapeutics, he said, was the oldest of the arts, as it was the youngest of the sciences. Having reviewed the claims of modern therapeutics to be regarded as a science, he took up its relation to another comparatively recent study, — Ecology, or that department of science which investigates man with reference to his environment. The aim of his remarks was to show that success in therapeutics materially depends upon the recognition of the effects of the external conditions upon the individual, especially taking into account the "personal equation." He dwelt upon the various phases of the subject, and incidentally referred to the "Emmanuel experiment." This appeared to him to be based on a scientific foundation, and he thought that if it could be continued in the same conservative and judicious manner in which it had been inaugurated, it might be of great service to a very large class of more or less neurotic patients. In concluding, he spoke of the very important recent development of therapeutics in connection with state medicine; especially the action of the authorities, through their health boards and sanitary officials, in deliberately setting to work to change the environment of the individual.

The afternoon session was principally devoted to a

SYMPOSIUM ON DISEASES OF THE VASCULAR SYSTEM

which was opened with a paper by DR. FREDERICK P. HENRY, Philadelphia, on the

THERAPEUTICS OF CARDIOVASCULAR DISEASE.

In speaking of the medicinal treatment of arteriosclerosis, he said that this might be divided into the treatment of the condition as a whole, including the arterial hypertension so frequently accompanying it, and that of its local manifestations. For the former purpose, clinical experience spoke strongly in favor of the persevering employment of the preparations of iodine. In the symptomatic treatment, while the nitrites held first place, the theobromine preparations were well worthy of a trial, and digitalis or its succed anca were called for when the indications were such as are met with in failing compensation in general.

Dr. Roland C. Curtin, Philadelphia, read a paper on

CACTUS GRANDIFLORUS AS A THERAPEUTIC AGENT IN CARDIAC DISEASES.

This drug he regarded as a mild tonic stimulant for the heart, acting especially upon the inhibitory nerves, and more particularly useful in cardiac neuroses. Its influence was different from that of any other heart remedy, and it constituted an efficient adjuvant to others, often relieving pain and distress. As it was not a powerful cardiac tonic or stimulant, it was not to be alone depended upon in a seriously diseased heart. In employing it, great care should be taken to secure a reliable preparation, as many of those found in the shops were entirely inert.

Dr. H. C. Wood, Jr., Philadelphia, read a paper on

THE PHARMACOLOGY OF HEART STIMULANTS.

For lack of time he confined his attention to the digitalis group of drugs, the three essential factors in the action of which were. (1) the stimulant influence upon the cardio-inhibitory mechanism which prolongs the diastole and thus slows the pulse; (2) the increase in the tonicity of the heart muscle, leading to a more complete and powerful systole; (3) the constriction of the blood vessels. The effect of digitalis in slowing the pulse he believed was a more important factor in the beneficial influence of the drug than was generally recognized, since in cases of chronic heart disease it was essential to make the burden thrown upon the enfeebled organ as light as possible. The mere stimulation of the heart muscle was of minor importance. The only phase of the effect of digitalis in this regard which he thought required emphasis at the present time was that in no other portion of the heart is the influence of the drug felt in the same way as in the left ventricle. This fact became of importance in certain cases of mitral regurgitation where the ventricular muscle had undergone a larger degree of hypertrophy than the auricle. Under the influence of the digitalis the ventricle might drive the blood backwards through the leaky valve so vigorously as to overcome the muscular resistance of the feeble auricle and lead to further dilatation of that part of the heart. The vaso-constrictor action of digitalis had frequently been regarded as a harmful by-effect, and one therefore to be avoided or combated — a point of view which Dr. Wood believed had at times led practitioners to adopt irrational or even injurious measures. While it was true that it required more force to drive the blood through narrow arteries than through dilated ones, it was equally true that in many instances the vascular contraction was a conservative effort on the part of nature to maintain the circulatory equilibrium. He did not wish to be understood, however, as holding that the vascular effect of drugs like digitalis is never detrimental. When, as a result either of degenerative changes in the muscle or of an extreme degree of dilatation, the muscular tissue of the ventricle was too scanty to properly respond to their tonic influence, it could scarcely be doubted that the increased resistance to the flow of blood might do much damage. Still, he believed that cases of this kind were much less frequently met with than was generally supposed. Clinicians, therefore, should not be too hasty in endeavoring to dilate the vessels in cases of chronic heart disease, and especially because almost the only agents we possessed for this purpose, the nitrites, had the effect of increasing the rate of the pulse, and hence tended to counteract the beneficial influence of digitalis in slowing the heart. The only reason why more harm was not accomplished by nitroglycerin in these cases was because the method in which it was ordinarily administered precluded any possibility of its having serious influence upon the circulation. On account of the evanescent character of the action of the drug it was folly to expect any permanent result from its administration three times in the twenty-four hours. The speaker merely referred to squill and apocynum in passing, since, on account of their irritant action upon the gastro-intestinal tract and the kidneys, he regarded them of practical utility only in selected cases. As to strophanthus, which was commonly regarded to have had little vaso-constrictor action, it had now been demonstrated that the difference between it and digitalis was comparatively slight. Strophanthus, however, had the advantage that it was less likely to give rise to cumulative toxic effects. Of adonidin, our knowledge was far from satisfactory, and it still remained only in the stage of promise. Having stated that in cases of chronic heart weakness where merely the cardiac action of this group was desired, digitalis still stood supreme, he spoke briefly of the digitalis glucosides and stated that none of these had been found to adequately represent the therapeutic virtues of the drug itself.

Dr. T. E. Satterthwaite, New York, read a paper on

SOME INSTRUMENTS OF PRECISION AND THEIR USE IN CARDIAC THERAPEUTICS.

His purpose, he said, was to show why the sphygmograph had fallen into comparative disuse and, on the other hand, the growing though still restricted field of the sphygmomanometer. A number of years ago the conclusion had been arrived at that no differentiation of valvular diseases can be made by means of the sphygmograph. Aside from the difficulty of securing a good tracing, clinicians were agreed neither upon the standard normal curve nor the standard for the several valvular diseases. This instrument, however, was capable of demonstrating the rhythm and the pulse-rate, so that it was useful in the very rare instances in which the pulse could not be counted. The tension was not shown as well by it as by the trained finger. While the sphygmograph was being abandoned the sphygmomanometer was being gradually developed for the purpose of determining vascular pressure in health and disease. Some of the uses to which the latter might be applied were illustrated in a serious of laboratory experiments conducted by Dr. Haven Emerson in Dr. Satterthwaite's presence, and he gave a short report of these. In line with these were certain experiments recently reported by Dr. H. W. Cook. In a series of three experiments by Dr. R. G. Kemp in the Manhattan State Hospital the effect of acute dilatation of the stomach in reducing blood-pressure was well shown by the instrument, illustrating the danger to a weak heart from a dilated stomach. In his own experience, in from 6 to 8% of sudden deaths in cardiac disease, the immediate cause was some acute gastric disorder. At present the utility of the sphygmomanometer appeared to lie chiefly in determining the comparative value of remedies and the effects of posture, different forms of physical exercise, and baths on the blood-pressure. In these directions, and especially in the study of the pharmaco-dynamics of cardiac remedies, it would seem to offer a large field of usefulness. The ideal instrument, he thought, was still to be devised. This must eliminate the personal equation, which was now the chief source of inaccuracy.

Dr. S. Solis Cohen, having spoken of " Some Cardiovascular Neuroses and their Treatment," Dr. Judson Daland, Philadelphia, read a paper on

VENESECTION AND CARDIOVASCULAR AFFECTIONS.

The use of venesection in these diseases, he said, was referred to by many authors, but his experience taught him that it receives but scant attention in actual practice. Having referred to the reasons which seemed to account for venesections having become a lost art, he said that usually, in cardiovascular affections, it might be employed as a palliative or as a life-saving measure. As a rule it became necessary in conditions where the patient's life was in jeopardy, and was ofttimes unduly postponed; so that when performed, even though marked amelioration of symptoms was secured, death eventually occurred. Occasionally, however, certain death was averted. Venesection was essentially indicated in valvular diseases of the heart with well-marked failure of compensation, where the patient presented extreme dyspnea or orthopnea, cyanosis, tumultuous cardiac action, a rapid, small, feeble pulse, distention of the veins of the head and neck, feeble apex-beat displaced to the left and extending over a larger area than normal, increase in the area of cardiac dullness, and not infrequently accentuation of the pulmonic second sound. It was especially indicated if these symptoms and signs were progressive, despite the administration of the ordinary cardiovascular remedies. If degeneration of the myocardium were not extreme, the relief thus secured was immediate and satisfactory. In pronounced degeneration, however, venesection was valueless. In acute pulmonary edema, even when the patient was almost moribund, venesection often induced marked palliation, and was sometimes followed by recovery, and in aneurism of the arch of the aorta, dyspnea or pain might be temporarily relieved by the abstraction of 8 or 10 oz. of blood. When in acute croupous pneumonia the symptoms and signs of right heart dilatation showed themselves, venesection to the extent of from 20 to 24 oz. became not only a palliative measure of great value, but occasionally saved life. Venesection was frequently of great value also in certain cases of failure of compensation in the course of arterial sclerosis. The brilliant results occasionally observed from the abstraction of from 20 to 30 oz. of blood in uremia were well recognized, although explanations of the good effect differed.

Dr. A. D. Blackader, Montreal, read a paper entitled,

A FEW CONDITIONS REQUIRING CAUTION IN THE USE OF DIGITALIS.

He said that in digitalis we had a drug with very definite therapeutic indications and which, judiciously employed, might prove of the highest possible service. Unless it were used under correct indications, however, distinct harm might be done by it. In aortic regurgitation it was rarely indicated, and only when symptoms of dilatation had supervened should the advisability of employing it be considered. In the stenoses, clinical experience had shown that until indications of failure in the right ventricle manifested themselves, harm and not good might result from stimulating overaction in either auricle or ventricle against an insuperable obstacle. In all these cases it should be recognized that increased strain on the musculature of any of the cardiac cavities, if developed slowly, tends of itself to induce compensatory hypertrophy, if the nutrition of the muscle is maintained. While the physician might make judicious use of the increased power evoked by digitalis, he would be wise at the same time to abolish all undue overstrain by rest in bed when necessary, or by moderation of exertion on the part of the patient. Having referred to some special means for maintaining the muscular nutrition of the heart, he said that in the treatment of all these cases it should be borne in mind that when once compensation had been lost, time was required to effect its restoration. Prolonged rest in bed, with judicious employment of digitalis, might secure this in many instances, but in others it would often be found desirable to supplement the very moderate stimulation by digitalis with that of gradually increased resistant exercises, while the patient spent most of his time in bed. In acute endocarditis especially, but also in acute myocarditis, the use of digitalis was always to be deprecated. The most frequent causes of injurious effects from digitalis, the speaker thought, were a too rigid routine of administration and the placing of too much reliance upon this remedy alone, without considering other means for maintaining the all-important nutrition of the heart muscle.

DISCUSSION.

The discussion was opened by Dr. J. C. Wilson, Philadelphia, who having spoken of the hopelessness in cardiac cases for a long period after the time of Laennec, followed by the period of digitalis and its abuse, said that we had now reached a third period, that of broad conceptions of diseases of the heart. The main point was the careful study of the individual case, and, as a result of this, its appropriate clinical management. He said he did not know of any field in which more satisfactory results were now obtained than in chronic valvular disease, and in illustration he referred to three classes of cases: (1) Those in which compensation has developed hand-in-hand with the lesion and is still maintained; (2) those in which compensation fails; (3) those in which compensation has so ruptured that it is only a question of palliation for the rest of the patient's life.

In the discussion several of the speakers expressed themselves as in entire accord with Dr. Daland's views on venesection. Dr. O. T. Osborne, New Haven, Conn., said that he was inclined to describe a cardiac tonic as a drug which when given to a patient would leave the heart in better condition than before its use, while a cardiac stimulant was merely a brace, which would not leave the heart better. As regards nitroglycerin, it was very important to give the right dose, very large doses being required in some instances and very small ones in others. He could not agree that because the laboratory said that the effect of the drug lasts but an hour or so we should necessarily give it every two hours.

Dr. J. M. Anders, Philadelphia, read a paper on

THE UNITED STATESPHAR MACOPŒIA FROM A PHYSICIAN'S STANDPOINT.

To-day, he said, the question of the readjustment of the physician's pharmaceutics, with a view to eliminating unethical and questionable preparations and remedies, was being seriously considered in many parts of the country, in the medical profession and outside it.

The profession had clearly entered upon a reconstructive movement which could not be ignored, but must be continued until the needed disciplinary measures had successfully, prudently and reasonably been applied, and thus American therapeutics be placed upon a more moral and scientific basis. The work of bringing about an improved knowledge of the tried remedies of the pharmacopœia was partly educational and partly organizational, and it fell naturally within the scope of activity of the American Therapeutic Society to aid in the readjustment and development of scientific pharmaceutics. The aim should be, especially by those in high places, to return by acts and utterances to the more simple and more reliable therapeutic agents of bygone days; or, in other words, to advance pharmaco-therapeutics along scientific and biological rather than commercial lines. There should also be a perfect understanding between the medical and pharmaceutical professions. There should not exist the slightest cause for one to distrust the motives, scientific accuracy of methods, and facts of the other; but, on the contrary, harmonious, co-operative efforts, which would render the ground favorable for progressive and advanced pharmacy and therapeutics.

At this session papers on "The United States Pharmacopœia and National Formulary as Standards for Physicians and Pharmacists" and "The Preparations of the United States Pharmacopœia and National Formulary" were read by invitation by H. C. Blair, Phar.G., and M. I. Wilbert, Phar.M., of Philadelphia.

In the evening there was a joint meeting of the society with the Philadelphia branch of the American Pharmaceutical Association, when M. C. E. de Sajous, Philadelphia, delivered an address on

THE AUTO-PROTECTIVE RESOURCES OF THE BODY — A NEW FOUNDATION FOR SCIENTIFIC THERAPEUTICS.

It is impossible to present within brief limits an adequate résumé of this elaborate and very suggestive address. It is published in full in the *Monthly Cyclopedia and Medical Bulletin* (*Consolidated*), May, 1908.

This was followed by a paper by Prof. Joseph P. Remington, Phar.D., on

THE UNITED STATES PHARMACOPŒIA, A THERAPEUTIC STANDARD

Having given a sketch of the history of the pharmacopœia, he said that while up to the edition of 1890 it had proved generally acceptable and improved greatly each year as therapeutics progressed, the book was never until now a compulsory standard. Ethical physicians and pharmacists, indeed, accepted it as authoritative, and the government adopted its standards to regulate the admission of drugs through the custom houses, but manufacturers and others did not regard the standards as obligatory. The passage of the Food and Drugs Act, June 30, 1906, however, made the United States Pharmacopœia the legal standard for the United States. The immediate effect of this legislation was to start a campaign of discontent on the part of some manufacturers of chemicals and medicines, particularly as it necessitated the revision of nearly all the labels for the products of the factory. One of the most beneficial results of the Act was the establishing of definite scientific names for drugs and medicines, the law requiring a compliance with the standards of strength and purity of the Pharmacopœia; but the regulations permitted six months' time for manufacturers to relabel, their products, and the Departments of Agriculture, the Treasury and Commerce wisely agreed to extend the time still further, so that no hardship would be placed upon the manufacturers who wished to be honest and to comply with the law. The essence of the Food and Drugs Act was that "the label must tell the truth." Manufacturers, however, realized that some of the standards of the Pharmacopœia were too rigid and that some of the tests needed revision, and it, therefore, became necessary to issue in 1907 an official circular containing certain additions and corrections. Among the results of the Food and Drugs Act were that honest manufacturers were placed on an equal footing and that dishonest competition could now be successfully combated. Still, the Act, being a national law, could operate only in the case of "interstate commerce," or where goods were transported from one state to another; hence the unscrupulous dealer could still practice his nefarious business in those states where there was no state law covering the subject. So strong, however, was the sentiment throughout the country in favor of pure food and drugs that seventeen states at once enacted laws based on lines similar to those in the national act. Another feature of the Act was that it punished false or exaggerated statements with regard to medicines by providing a penalty for misbranding. Thus, belladonna, opium, ipecac, cinchona, etc., must comply with definite standards, or a manufacturer was liable to punishment. But there was a larger number of drugs for which analytical chemistry was unable as yet to devise standards, and these assumed importance in view of the next revision of the Pharmacopœia, which was only two years distant. The great need in therapeutics and in pharmacopœial revision to-day was more exact knowledge for fixing the therapeutic efficiency of drugs, the action of which did not depend upon the presence of alkaloids or their principles. In conclusion the speaker urged the advantages which would result from the Committee of Revision's having a laboratory at its disposal, and appealed to the American Therapeutic Society to use its influence in securing this. It was not suggested, he said, that such laboratory should interfere with or duplicate the work of the American Medical Association in drug investigation, but that it should co-operate with that body in a somewhat different line of work — that of proving and testing official drugs and those which were in common use. Commercialism had been the bane of progress and there was the greatest need of an authoritative court of final resort, whose researches would be regarded by all as untainted by personal interests and solely in the interest of science.

(*To be continued.*)

Book Review.

The Principles and Practice of Gynecology. For Students and Practitioners. By E. C. Dudley, A.M., M.D., Ex-President of the American Gynecological Society; Professor of Gynecology, Northwestern University Medical School; Gynecologist to St. Luke's and Wesley Hospitals, Chicago; Ex-President of the Chicago Gynecological Society; one of the Founders of the Congrès Périodique International de Gynécologie et d'Obstétrique; Fellow of the Royal Society of Medicine, England. Fifth edition, revised and enlarged. With 431 illustrations and 20 full-page plates in colors and monochrome. Philadelphia and New York: Lea & Febiger. 1908.

This fifth edition of Dr. Dudley's excellent textbook bears evidences on its pages of a thorough revision. One notes a new introductory chapter on the scope of gynecology, and a new final chapter on incontinence of urine in women, both taken from the author's presidential address before the American Gynecological Society in 1905. The author's new operation for narrowing the anterior wall of the vagina in prolapse is described and figured clearly also by several colored plates. Additions and revisions are to be found also in the chapters on the treatment of pelvic peritonitis, myoma uteri and retroversion. The distinctive characteristics of the previous editions are preserved in this edition and the book merits a continued popularity.

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THE NEW DEAN OF THE HARVARD MEDICAL SCHOOL.

After a period of waiting, since the resignation of Dr. W. L. Richardson, extending over about a year, the corporation of Harvard University has appointed Dr. Henry Asbury Christian Dean of the Faculty of Medicine and Dean of the Medical School. During the interregnum the work of the dean's office has been carried on by Dr. Charles M. Green, who was peculiarly fitted for the office through his long experience as secretary of the medical faculty. At this time of general congratulation that a dean has finally been appointed, it is perhaps easy to ignore the faithful services rendered by his immediate predecessor; it is therefore a satisfaction to call attention to Dr. Green's long period of devotion to the interests of the school, first as the secretary of its faculty, and later for a brief period as its acting dean. In both of these positions he performed his arduous and somewhat thankless duties in a manner deserving of public recognition.

Dr. Christian comes to his new office with a training which unquestionably fits him well for the work which lies before him. A Virginian by birth, he received his collegiate education at Randolph-Macon College in his native town, graduating with the combined A.B. and A.M. degrees at the age of nineteen in 1895. He remained thereafter a year as an instructor in English, and devoted himself also to chemistry, for which he had early shown special aptitude. He entered the Johns Hopkins Medical School in 1896, and there came under the instruction and influence of Osler, Welch and others, who have, no doubt, done much to mold his attitude toward medical methods and problems. Instead of continuing in clinical work at Baltimore after his graduation in 1900, he came to Boston and devoted himself to pathology under the leadership of Councilman, first at the Boston City Hospital and later as instructor at the Harvard Medical School. During this period, which continued for five years, he distinguished himself as a painstaking investigator, a skilful organizer of methods of instruction and a lucid teacher. Leaving the department of pathology after an admirable record, he was made an instructor in the department of the Theory and Practice of Physic, then under the jurisdiction of Professor R. H. Fitz. The following year he was promoted to an assistant professorship, and shortly after Dr. Fitz's resignation he was appointed to the Hersey professorship in Dr. Fitz's place. His clinical experience has been gained chiefly through a year's teaching at the Massachusetts General Hospital and through his position as physician-in-chief of the Carney Hospital during the past year.

From the foregoing statement it will be seen that Dr. Christian has not been obliged to tread the weary path of slow advance, which is the lot of most men who attain distinction. On entering the Medical School he was forthwith made an instructor, and, after leaving the department of pathology, his rise from the rank of instructor to that of Hersey professor took place within a period of two years. In other words, he is one of the few men whose attainments, personality and promise have placed him in a position which his experience alone would not have justified. His elevation to the deanship of a great medical school at a most important period of its career is a further evidence of confidence which his past justifies less than the assurance of his future development. The precedent, if such it proves to be, of Dr. Christian's rapid advance to a position of great trust and responsibility, both on the side of teaching and administration in the broadest sense, is certainly significant of a salutary tendency too often neglected. Progress in education must depend upon the leadership of young men and upon wise selection of such leaders. The experience of the elders may in no other way be so usefully shown as in this selection. To elevate a man of peculiar fitness above his fellows, particularly if he be young, is provocative of feeling and possibly criticism, but the wisdom of such action, when looked at broadly, is not for a moment to be questioned. It is depressing to contemplate the wasted opportunities resulting from the suppression of young men of promise, whose capacity for leadership is never known because denied the possibility of expression. Herein lies the chief significance of Dr. Christian's most recent appointment. He is one of the youngest men of the medical faculty, both in years and time of appointment, and apart from the unquestioned wisdom of his selection as dean, it is the more significant as demonstrating the pursuance of a policy, which has been somewhat in evidence of late, of making fitness irrespective of time of service the essential condition of appointment to places of responsibility.

Dr. Christian's fitness for his new post is not to be questioned. That he or any other one man can have more than a superficial knowledge of the various departments of medical knowledge is evident; his training has, however, been fundamental in that he has approached general medicine from the pathological standpoint, and he has, therefore, a keen appreciation of the relation between the laboratory and the clinic. It is to be hoped and expected that the artificial breach between these two aspects of the general medical problem will be finally overcome during his administration. A much more difficult question to adjust in the coming years will be the proper co-ordination between the various subdivisions of what may properly be called a general medical training. Medicine has for many years been disintegrating into its special branches; the great task of the future will be to reintegrate these special fields of study and practice into a system of instruction which will give the medical student a comprehensive, intelligent and practical view of his professional work. The present co-ordination of the subjects of medical instruction is faulty in many respects; there is much false emphasis placed on certain branches of teaching and an equal neglect of others. The problem of the proper relation of subjects taught is becoming increasingly insistent, and to this the future dean of a progressive medical school must give a large share of his attention. Hardly less important is the attitude of the profession as represented by its medical schools toward the general public. How far is the public to be taken into our professional confidence? How far is it wise or salutary to exploit our work through the medium of public lectures? How may we best subserve the ends of public welfare in matters of health? These are some of the questions which must be seriously and judicially faced in the immediate future. There has, in short, not been a time in the history of medicine when problems of so varied a character have been presented to the leaders of medical thought. It is desirable that no mistakes be made.

The new dean of the Harvard Medical School faces many responsibilities, for which we believe he is well fitted by disposition and training. In bearing these responsibilities he will undoubtedly receive the heartiest support of his colleagues of the medical faculty.

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FEDERAL HEALTH LEGISLATION.

THERE is no doubt that the necessity of establishing a national bureau or department of health will soon be impressed upon Congress and that the presentation will result in appropriate legislation. One of the most conspicuous aspects of civilization to-day is the extraordinary and widespread application of the principles of sanitary science to human affairs. In the present agitation for federal legislation by the medical profession and its friends it should not be forgotten that for many years efforts have been made to this end. The American Public Health Association had its initial meetings in 1870, when Dr. Stephen Smith was its first president. Even at that time it was manifest that a central sanitary authority would be advisable, to say the least, and this association, which then took the first step, has since never ceased to work consistently for such legislation. Until the severe yellow-fever epidemic of 1878 the Marine-Hospital Service represented all there was of national authority in matters of the public health. This epidemic, with all its evil, served one good purpose and provided an opportunity, which the American Public Health Association seized upon. The suffering and loss of life and financial disaster which was then occasioned impressed upon Congress the necessity for action, and it was persuaded to provide for a National Board of Health, with a complete system of municipal, state and federal supervision. The law establishing this board, however, continued in force but four years, by which time the epidemic had been quite forgotten. Congress refused further legislation until, in 1902, the efficiency of the Marine-Hospital Service was increased, and its name changed to "The Public Health and Marine-Hospital Service."

The American Medical Association has recently taken this subject in hand, as has also the American Association for the Advancement of Science. The interest which the latter organization has manifested grew chiefly from the hearing of an impressive and most informing paper by Prof. J. Pease Norton,[1] which should be read by all interested in this subject, and all should be. Prof. Irving Fisher's activities in this direction have also been most serviceable. Professor Norton details how, for example, the federal government protects animals and plants. For these purposes the Department of Agriculture has, in a decade past, had appropriations of forty-six millions, but, comparatively speaking, Washington has in that time devoted nothing to the prevention of human infections. At present these prophylactic measures are taken by the Public Health and Marine-Hospital Service and the Life Saving Service, which report to the Treasury Department, for no other reason than because it has control of the customs; the Bureau of Animal Industry (Department of Agriculture): the Bureaus of Labor, of the Census and of Immigration (Department of Commerce and Labor). These divisions of the government expend for the purposes noted — in which matters of human health play but an incidental part — seven millions in an annual total of $725,000,000. Professor Norton would have some twenty bureaus under one head, and his list of subjects appropriate to be considered in disease prevention is enormous; it is probably exhaustive. His paper, read in June, 1906, was followed by the formation of the Committee of One Hundred, which has since become the basis of the American Health League. The latter has its official organ — *American Health.*

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[1] The Economic Advisability of Inaugurating a National Organization of Health. *Jour. Am. Med. Asso.*, Sept. 29, 1906.

There is at present the widest diversity of views regarding national health legislation. Such, perhaps, would be apt to be the case in regard to any subject in which our profession might be interested. However, such diversity is perfectly natural by reason of the almost infinite variety of questions to be considered, and of interests — village, town, municipality, state and national which must be consulted. Yet it is absolutely essential that all these views should become harmonized and formulated before any effective legislation can be hoped for from Congress. That our national lawmakers are firmly impressed with the need of such action on their part there can be no doubt. The platforms of both our great political parties contain "planks" which endorse the movement we here set forth. And although political "planks" do not always get themselves converted into laws of corresponding tenor, it seems quite certain that our profession can, in the very near future, have established a sound system of national jurisdiction over public health matters provided only it can arrange a broad and logical plan to this end.

We would at this time advance but one consideration. The national government should concern itself only with prophylaxis. It should, moreover, not be expected to do for any state such things as concern that state alone, nor should it assume any duty of a state, by which other states may be affected, which it is willing and able to do for itself. But when state control is inadequate (as when one state transmits its typhoid or its yellow fever to adjacent states), federal action is certainly indicated. Thus far, as in New Orleans and in San Francisco, it has been welcomed by the state and local authorities; nor have questions of states rights been raised in the presence of such beneficent activities.

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MEDICAL NOTES.

Plague in the Azores. — Plague, which has for some time been more or less active in the Azores, is reported to have broken out with greater activity in Terceira, one of the Azores group.

A Virulent Disease in Morocco. — It is announced that a virulent disease hitherto fatal in every case has appeared at Rabat, Morocco, the nature of which is not understood. Precautionary measures are being taken.

Mississippi Valley Medical Association. — At the last meeting of the Mississippi Valley Medical Association the following officers were elected for the ensuing year: Drs. J. A. Witherspoon, Nashville, Tenn., president; Louis Frank, Louisville, Ky., first vice-president; Albert E. Sterne, Indianapolis, Ind., second vice-president; S. C. Stanton, Chicago, Ill., treasurer, and Henry Enos Tuley, Louisville, Ky., secretary. The next annual meeting will be held in St. Louis, Mo., October, 1909.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Oct. 27, 1908, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 121, scarlatina 53, typhoid fever 30. measles 34, smallpox 0, tuberculosis 55.

The death-rate of the reported deaths for the week ending Oct. 27, 1908, was 16.26.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Oct. 24, 1908, was 187, against 192 the corresponding week of last year, showing a decrease of 5 deaths and making the death-rate for the week 15.76. Of this number 88 were males and 99 were females; 180 were white and 7 colored; 110 were born in the United States, 76 in foreign countries and 1 unknown; 33 were of American parentage, 125 of foreign parentage and 29 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 87 cases and 4 deaths; scarlatina, 57 cases and 0 deaths; typhoid fever, 21 cases and 0 deaths; measles, 25 cases and 4 deaths; tuberculosis, 44 cases and 12 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 17, whooping cough 1, heart disease 25, bronchitis 4 and marasmus 9. There were 17 deaths from violent causes. The number of children who died under one year was 47; the number under five years 64. The number of persons who died over sixty years of age was 44. The deaths in public institutions were 73.

Cerebrospinal meningitis, 1 cases and 1 death.

Appointment of Dr. H. B. Howard. — Dr. H. B. Howard has been appointed chairman of the Massachusetts State Board of Insanity.

Twenty-Five Hundred Dollars Raised for Somerville Hospital. — Contributions to the extent of $2,500 have been received by the Somerville, Mass., hospital.

Hartford County Medical Association. — The semi-annual meeting of the Hartford County Medical Association was held at the Hunt Memorial Building of the Hartford Medical Society on Tuesday, Oct. 27. The address of the evening was delivered by Dr. R. H. Fitz on the "Early Diagnosis of Gallstones."

Sites for Tuberculosis Sanatoria. — Legislative provision was made in 1907 for three new sanatoria for the treatment of tuberculosis. The commission appointed to investigate the matter has finally reached definite conclusions as to sites. One is to be at Lakeville, thirty-seven miles from Boston; another at North Reading, sixteen miles from Boston in a northeasterly direction, and the third in Westfield, near the West Springfield line. Building on these sites is progressing so that by another year, including the institution at Rutland, Massachusetts will have four sanatoria in active operation.

NEW YORK.

A Centenarian. — James Beattie, a farmer of Oswegatchie, St. Lawrence County, N. Y., believed to be the oldest resident of northern New York, died on Oct. 17 at the age of one hundred and two years and nine months.

Fiftieth Anniversary, St. Luke's Hospital. — The fiftieth annual meeting of the Board of Managers of St. Luke's Hospital, which was founded in 1858 by the late Rev. Dr. Muhlenberg, was held on Oct. 19, when it was announced that the receipts of legacies and gifts during the past year amounted to $281,552. All the managers and hospital officials were re-elected.

A New Director of Physical Training in Public Schools. — Dr. C. Ward Crampton, assistant director of physical training in the public schools of New York, has been appointed by the Board of Education director of physical training, in the place of Dr. Luther H. Gulick, who recently resigned in order to give more time and attention to his duties as president of the Playground Association of America. Dr. Crampton has also been elected to succeed Dr. Gulick as secretary of the Public Schools Athletic League.

The New Medical Directory. — The new medical directory just issued by the New York State Medical Society contains the names of 12,711 registered physicians in the state, an increase of 543 over the number recorded last year. Six thousand six hundred and forty-two are credited to New York City, and 6,069 to the rest of the state. The increase over 1907 in the Boroughs of Manhattan and the Bronx is 336; in Brooklyn, 134, and in Queens, 18, while in Richmond (Staten Island), there is a decrease of 2. In the state outside of the city of New York, an increase of 57 is noted.

Students' Expenses at Columbia. — A comparative statement of the annual expenses of the students of Columbia University has been compiled by the committees on student employment from estimates furnished by students themselves. In the Medical Department, the expenses are given as follows: Low, $559.50; average, $672; liberal, $811, up. The estimates average, as a rule, about $100 a year higher than the figures at Harvard or Yale, owing to the higher living expenses in New York. The statistics collected show that about 750 of the students of Columbia (including Barnard College) are entirely or in part self-supporting.

Smallpox. — Smallpox has been prevailing for a number of weeks at Patchogue, Long Island. As in the case of several other outbreaks in the state during the past year, the disease is of such mild type that its true character has been recognized only very recently. Many of the cases have been diagnosed as chicken pox, and in others the eruption has been thought to be due to cosmetics used for "making up" in a series of theatrical entertainments in which between two hundred and three hundred of the townspeople took part last August. Dr. W. F. Bennett, who is supervisor of the town as well as a physician, was the first to recognize the disease as smallpox. He immediately notified the State Board of Health, and Dr. C. F. Curtis, diagnostician of the department, who came on from Albany, confirmed his diagnosis. It is regarded as probable that the infection was received from the hired costumes worn in the theatricals.

The Appropriation for the Tuberculosis Exhibit. — The Board of Estimate and Apportionment, at its first meeting after the meeting of the Board of Aldermen at which that body voted the appropriation of $20,000 for the expenses in New York of the exhibit which had been held in connection with the International Congress on Tuberculosis in Washington, finding that there was some reason to doubt the legality of this action, held up the appropriation in order to obtain the opinion of the corporation counsel in regard to this matter. The corporation counsel, after due consideration, rendered the opinion that it would be legal for the city to appropriate $13,000 (why this particular amount was not made public) for the expenses of the exhibit under the auspices of the Health Department if having the exhibit in New York were regarded as essential to the instruction of citizens in matters of health. Accordingly, the aldermen, at their meeting of Oct. 20, rescinded their former action, and unanimously voted an appropriation of $13,000 for the Health Department, to be used for the exhibit. With the private subscriptions which have been secured, this amount will be sufficient to cover the expenses, and arrangements are now well under way for holding the exhibit at the building of the American Museum of Natural History.

The State Department of Health. — It is in contemplation by the State Department of Health to prepare and present to the legislature, at its coming session, a revised law which will correct many existing conditions and improve the present methods of procedure. In furtherance of this end it invites for its consideration suggestions as to changes and amendments from health officers and others interested in the subject. The inadequacy of many of the provisions of the present public health law has, on many occasions, been brought forcibly to the attention of the officials of the department, and for a long time they have realized that the entire law needs redrafting if the most efficient work is to be done and the progress of sanitary science successfully maintained in the state. The popular impression is that the department has almost unlimited authority to act, but this is not the case. While it has been granted ample scope to investigate and recommend, it really has but little direct authority. It was established simply as an advisory body and attempts to secure from the legislature authority sufficient to enable it to carry out needed reforms in conditions disclosed by its investigations have nearly always resulted in failure. It is constantly being appealed to for relief in cases where local boards have neglected or refused to perform their plain duty, yet it possesses no direct and forceful method of procedure by which to deal with such cases. The department, therefore, urges that sufficient power should be given it to enable it to protect more fully the public health. It could thus cope more quickly and efficiently with outbreaks of contagious disease, more rapid progress would be made in securing the freedom of streams from pollution and protecting public water supplies, and in various instances such measures could be enforced as its investigations by experts had shown to be necessary.

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Current Literature.

Medical Record.

Sept. 5, 1908.

1. *Symonds, B. *The Influence of Overweight and Underweight on Vitality.*
2. Magruder, F. E. *Congenital Umbilical Hernia with Report of a Case.*
3. Karpas, M. J. *Report of a Case of Brain Tumor with Autopsy.*
4. Gaston, McF., Jr. *Case of Obstruction of the Bowels simulating Appendicitis.*
5. *Bodkin, M. L. *Sigmoiditis.*
6. Douglas, C. J. *The Narcotic Method of Treating Morphinism.*
7. Wark, D. *The Effective Treatment of Membranous Colitis.*
8. Wood, P. R. *A Tube for Self-Insufflation of Vapor into the Middle Ear.*

1. Symonds has summarized the statistics of insurance companies to show how much more serious the result of overweight is than underweight.

5. Bodkin classifies inflammation of the sigmoid as follows: Acute and chronic catarrhal sigmoiditis, non-suppurative; perisigmoiditis, acute suppurative and chronic non-suppurative.

The acute sigmoiditis occurs most frequently in young adults, the chronic hypertrophic form may follow the acute and is essentially a hypertrophic catarrhal disease with a thickening of the mucous membrane and submucosa. The characteristic sausage-shaped tumor is revealed on examination; symptoms of mucous colitis may be present.

Chronic atrophic sigmoiditis is an atrophic catarrhal inflammation with atrophied glandular elements and a thinning of the mucous membrane. The history is one of constipation, atrophic colitis, hemorrhoids, fissure and pruritus ani.

Acute perisigmoiditis is suppurative, with the clinical picture of a collection of pus. Chronic perisigmoiditis is due primarily to some inflammatory process on the outside of the bowel.

The treatment of the several conditions is as follows: In acute catharrhal sigmoiditis the treatment is directed to removing the cause and soothing the inflamed membrane. Solutions of carbolic acid, nitrate of silver, krameria and flaxseed tea may be used and local applications of opium and ice externally. The chronic hypertrophic form should be treated with stimulating remedies such as ichthyol, nitrate of silver, etc.

The atrophic condition is most often caused by syphilis and is most difficult to treat.

Acute perisigmoiditis requires surgical interference, the chronic form may be treated locally through a sigmoidoscope or surgically as the indications may direct. [W. B. R.]

Sept. 12, 1908.

1. *Knopf, S. A. *The Relation of the Medical Profession to the Housing Problem.*
2. Peterson, E. W. *Remarks on Acute Intestinal Obstruction with Especial Reference to Intussusception.*
3. Barker, M. R. *Abnormal Motility of the Stomach a Valuable Factor in the Diagnosis of Gastric Lesions.*
4. Kanoky, J. P. *Lupus Erythematosus.*
5. Valentine, J. J. *Preparation for a Genito-Urinary Diagnosis.*
6. Lesser, H. R. *A Keratoplasty.*

1. Knopf gives a very interesting account of the conditions of life in our large cities and the experiments which have been made to remedy the conditions existing.

He goes into the subject very deeply, and the article is full of valuable hints on what can be done to prevent sickness and disease. [W. B. R.]

Sept. 19, 1908.

1. Hill, L. L. *Wounds of the Heart, with a Report of Three Cases and Conclusions Drawn.*
2. *McCosh, A. *Observations on the Treatment of Exophthalmic Goiter.*
3. *Walsh, J. *The Early Diagnosis of Pulmonary Tuberculosis.*
4. Cadwalader, W. B. *Acute Anterior Poliomyelitis. A Pathological Study of Three Cases.*
5. Richter, G. *Kaolin as a Remedy.*
6. Reynolds, W. S. *Some Observations on the Urethral Length.*

2. McCosh believes that the best results in exophthalmic goiter can be obtained by surgery, and by serum treatment. He believes that the most effectual serum is the serum of Rogers and Beebe. In operative treatment the best results are obtained after removal of about three quarters of the thyroid, and ligation and cutting of three of the arteries.

In some two hundred operations on the thyroid he has never seen any results suggesting injury or removal of the parathyroid glands, although he has disregarded them.

He reports the results of twenty-three operations in Graves' disease.

3. Walsh gives a very careful and excellent summary of the points in diagnosis of an early case of pulmonary tuberculosis. [W. B. R.]

Sept. 26, 1908.

1. Bryant, W. S. *Tuberculosis of the Ear.*
2. Cleaves, M. A. *The Chemical Rays Promoters of Life and Energy: Their Mode of Action and Their Therapeutic Uses.*
3. Caravin, E. *Caguillere's Serum in the Treatment of Tuberculosis.*
4. Philbrick, I. C. *Malnutrition and Society.*
5. Gallant, A. E. *Vagino-ureterostomy after Nephrectomy for Pyonephrosis due to a "Sigmate" Constriction of the Ureter.*

New York Medical Journal.

Sept. 19, 1908.

1. *Smith, A. L. *Explosion of the Theory of Heredity.*
2. Murdock, E. H. *Ischochymia.*
3. Tuttle, J. P. *Cancer of the Rectum.* (Continued.)
4. Stuart, A. M. *Psychotherapy.*
5. Manges, M. *Case of Tuberculous Pericarditis: Embolic Hemiplegia Three Days after Paracentesis of the Pericardium.*
6. Alexander, B. *Skiagrams of Foreign Bodies.*
7. Duncan, H. A., and Illman, G. M. *Bacterial Treatment of Erysipelas.*

1. Smith actively combats the theory that cancer, insanity and drunkenness are hereditary. He finds an analogy in the old belief that tuberculosis was entirely hereditary. He attempts to show that cancer is probably caused by an ameba, that nearly all cases of insanity are due either to defective nutrition or poisoning of the brain, and that drunkenness is often largely a matter of imitation and bad environment. [R. I. L.]

The Journal of the American Medical Association.

Sept. 19, 1908.

1. Dorsett, W. B. *Criminal Abortion in Its Broades Sense.*
2. Matas, R. *In Memoriam: Nicholas Senn; The Responsibilities of the Hour.*
3. Fussell, M. H. *Simplicity in Prescribing.*
4. Cuthbertson, W. *Diphtheritic Genital Infection simulating Puerperal Fever.*
5. Martin, A. *Genital Tuberculosis.*
6. Eastman, T. B. *The Conservative Surgeon and the Symptomless Uterine Fibroid.*
7. *Shaffer, P. A. *Metabolism in Typhoid.*
8. Peabody, F. W. *Bacteriologic Diagnosis of Typhoid.*
9. Park, W. H. *Typhoid Bacilli Carriers.*
10. *McCrae, T. *Treatment of Typhoid.*
11. Cohen, S. S. *The Prescribing of Proprietaries, especially Proprietary Mixtures.*
12. Dudley, F. W. *New Bloodless Method of Amputating the Anus and Rectum.*
13. Singley, J. D. *Relative Merits of the Operations for Hemorrhoids.*
14. Gilmer, T. L. *Ranula and Other Diseases of the Salivary Glandular System.*
15. Deane, L. C. *Thrombosis of Superior Longitudinal and Lateral Sinuses treated by Opening the Torcular Herophili.*
16. Eichberg, J. *The Factors in the Estimation of Blood Pressure.*
17. Taussig, F. J. *Uterus and Stomach.*

7. Shaffer believes that the causes for the loss of body protein in typhoid fever are three in number, viz., partial starvation, pyrexia and the action of bacterial toxins. A typhoid fever patient on the ordinary typhoid diets receives only 50% or less of his energy requirement. The writer believes that it is possible to retard this loss of body protein by dietetic means. The principle is to have the diet contain a moderate amount of protein and the largest possible amount of carbohydrate. It has been shown clinically and experimentally that carbohydrates are the strongest sparers of body protein in health and in fever. A large amount of fat is objectionable because of its tendency towards digestive disturbances and diarrhea. Protein should be kept at the minimum effective amount because of the large amount of work it throws on the intestines and kidneys, but more especially because of its action in increasing the heat production. In the average case of typhoid the digestion of food is within 10 or 15% of normal. In his cases the increased alimentation did not cause fermentation and tympanites or increased fever. The loss of body protein was much retarded. However, it was necessary to give 60–80 calories per kilogram (3,000–4,000 calories) to bring this about, of which over 2,000 were derived from carbohydrates. After trying various carbohydrates, Shaffer advocates milk sugar. It does not ferment readily, is less sweet than cane sugar and

is much more soluble than any form of starch. Milk, cream and eggs furnish the fat and protein. The results in actual typhoid fever cases were decidedly favorable but need further demonstration.

10. McCrae believes in a very simple diet in typhoid fever. Milk with its modifications and albumen water form the basis. Whey is especially favored. The importance of giving large amounts of water is much emphasized. One hundred ounces of urine a day should be the minimum. The use of opium is opposed vigorously. McCrae does not give it for diarrhea and takes exception to the use of opium in hemorrhage. In typhoid hemorrhage the intake is limited and calcium salts are given but no opium. Hexamethylenamin (urotropin) is advised as a routine to every patient. Alcohol should not be given as a routine but only to combat toxemia. [R. I. L.]

The Quarterly Journal of Medicine. Vol. 1. No. 4.

July, 1908.

1. *Souttar, H. S., and Thompson, T. *The Direct Inspection of the Gastric Mucous Membrane.*
2. *Robinson, H. *The Clinical Bearing of Cutaneous Tenderness on Various Acute Abdominal Disorders, Especially Appendicitis.*
3. *Cathcart, E. P., Kennaway, E. L., and Leathes, J. B. *On the Origin of Endogenous Uric Acid.*
4. *West. *The Respiratory Movements in Hemiplegia.*
5. *Elwell, R. G. *Primary Malignant Disease of the Vermiform Appendix.*
6. White, W. H. *On Pads on the Finger-Joints.*
7. *Mackenzie, J. *The Extra-Systole. Part II.*

1. The authors describe a new gastroscope devised by them which seems to have advantages over those previously constructed. They claim that they can inspect the greater portion of the gastric mucous membrane and report the findings in twelve cases.

2. Robinson has made a careful investigation of the presence and significance of cutaneous tenderness in appendicitis. He was unable to confirm the many claims made for this symptom by Sherren, and comes to the conclusion that areas of tenderness are present in the majority of cases of acute appendicitis, but may also be present in certain other diseases. The diagnostic importance of this symptom is, therefore, not very great. Numerous charts showing the extent and distribution of the hyperesthesia are appended.

3. The writers were unable to confirm the work of Hirschstein, on which he based his theory that the diminution of the excretion of endogenous uric acid during the night time was due to retention during sleep. They found that administration of calf's thymus at night was followed by just as prompt an excretion of this exogenous uric acid as when it was given during the day time. They also found that in fever following typhoid vaccination the endogenous uric acid excretion rose and fell with the temperature; that exposure to cold causes a similar increase, which, however, outlasted the exposure; and finally, that severe muscular exertion causes a temporary decrease followed by an increase which lasted a day or two. They suggest that in all three of these conditions the uric acid has its origin in metabolic processes, occurring principally in the voluntary muscles and not immediately related to voluntary contractions and work.

4. In a case of hemiplegia West made respiratory tracings and found that on the paralyzed side both quiet and voluntary or "forced" breathing were diminished. This is contrary to the usual statement that ordinary breathing is increased and voluntary breathing diminished on the paralyzed side. Measurements showed that the affected side was flattened and the transverse diameter increased; on coughing, there was a distinct bulging of the paralyzed side.

5. Elwell reports a case of primary carcinoma of the appendix and discusses the literature. The distinctive features of malignant disease in this locality are the early age of the patient, the frequent co-existence of inflammatory conditions in the appendix and the clinical benignancy of the growth.

7. Mackenzie limits the term "extra-systole" to those cases where the auricle or ventricle or both together contract prematurely, but in which the fundamental sinus rhythm is maintained. He shows by means of tracings how the extra-systole is to be distinguished from other conditions which resemble it. From the pulse tracings sometimes valuable conclusions may be drawn as to the function of the heart muscle. Ordinarily there is following the extra-systole a beat which is larger and lasts longer than normal, thus encroaching on the period of rest. A healthy heart, however, will have time to recover the function of contractility and the beat following this large beat will be of normal size. If the heart muscle is damaged, on the contrary, the period of rest will be too short and the beat following the large beat will be smaller than the succeeding ones. Mackenzie has noticed this feature in some elderly persons with extra-systole, and in all such cases there was found at autopsy marked degenerative change of the heart muscle. In regard to prognosis, the ordinary extra-systole need not be a cause for alarm; when it occurs in young people it is of no moment whatever, and even in the elderly, it has little more significance than thickening of the peripheral arteries, provided that the sign just mentioned is absent. [W. T.]

Edinburgh Medical Journal.

July, 1908.

1. Clouston, T. S. *Blood and Mind.*
2. Turner, A. L., and Fraser, J. S. *Some Points of Interest in the Surgery of the Ear, Nose and Throat.*
3. *Boyd, F. D. *On the Diagnostic Limitations of the Recognition of Free Hydrochloric Acid in the Stomach Contents.*
4. Russell, W. *Arterial Structure and Arterial Function.*

3. Boyd discusses the diagnostic limitations of the recognition of free hydrochloric acid in the stomach contents. He believes that all of the present methods of determining the quantity of free HCl are unsatisfactory. The absence of free HCl is not pathognomonic of gastric cancer, but we know that free HCl is absent in at least 77% of cases of gastric carcinoma, and experience teaches that conditions which lead to an absence of free HCl and which cannot be differentiated clinically from gastric carcinoma are relatively uncommon at the period of life when carcinoma is most common. Exploratory laparotomy is advisable in the presence of this sign, along with progressive emaciation and ill health, at a time of life when carcinoma is at all probable. He discusses the significance of increased or diminished HCl in other gastric conditions and believes that the greatest field of usefulness for an examination for free HCl is in the differential diagnosis of atonic from obstructive dilatation. [J. B. H.]

August, 1908.

1. Beatson, G. T. *Two Successful Cases of Acute Intussusception, including that of the Vermiform Appendix, with Remarks on Treatment.*
2. Gray, H. M. W. *Vaccine Treatment in Surgery.*
3. Langwill, H. G. *Note on the Treatment of a Type of So-Called "Fainting Attack."*
4. *Eason, J. *Mechanical and Orthostatic Purpura.*
5. Low, R. C. *Ringworm and Favus.*

4. Eason gives a long and careful article on mechanical and orthostatic purpura. In the table which he presents of the causes of purpura he finds that 34% of purpura cases are of unknown etiology. Purpura may be of mechanical origin (*a*) if the vasomotor control of the blood supply to the capillary area is absent or inadequate to protect the capillary walls from too extreme lateral pressure, or (*b*) if the backward pressure be extreme, especially where there is a tendency to vasomotor inadequacy. Purpura is probably of mechanical origin in a fair proportion of the 34% of cases whose etiology has not yet otherwise been explained, but further information is required regarding the lateral pressure during rest, exercise, fatigue, etc., in the capillaries of the lower extremities in the normal as well as in the purpuric subject. Rest is an essential for treatment of all cases of purpura whether from mechanical or other causes. [J. B. H.]

September, 1908.

1. Simpson, A. R. *Birth-Stools in Egypt.*
2. Nicoll, James H. *Hernia of the Ovary in Infants, with Reference Specially to the Operative Treatment of the Affection.*

3. Lediard, H. A. *Lymphangioma.*
4. Beard, J. *Two Cases of Meningitis Admitted to Hospital as Enteric Fever, with Treatment (Medicinal and Dietetic).*
5. Struthers, J. W. *The Treatment of Tetanus.*
6. *Crombie, J. F. *The Leucocytosis of Whooping-Cough, with Analysis of 112 Cases.*
7. Dingwall-Fordyce, A. *The Percentage Composition of Edinburgh Milks.*
8. Johnstone, R. W. *An Unsuspected Case of Placenta Previa in a Primigravida at the Sixth Month.*
9. Moffat, H. A. *Condition of Parts Sixty-two Years after Excision of the Elbow-Joint.*

6. Crombie presents a long interesting article on the leucocytosis of whooping-cough as a result of his analysis of 112 cases. He has divided his work into a study of the blood of the disease during the catarrhal stage, during the first, second and third weeks of the cough, in convalescent cases, in chronic cases and in cases occurring in adults. He presents a number of cases in detail. The normal leucocytosis in children under eleven years old is 10,000, and this must be borne in mind in any blood examination at this age, but the leucocytosis met with in whooping-cough he believes is of itself almost diagnostic, as it does not occur in other affections resembling whooping-cough. The differential count he believes is an invariable and absolutely accurate means of diagnosing whooping-cough. The lymphocytes are always increased either absolutely or relatively. It is to this increase of the lymphocytes over the polynuclear cells that the leucocytosis is due and the term "lymphocytosis of whooping-cough" would be a more correct one. He presents tables with figures of various blood examinations in different stages of the disease. [J. B. H.]

Deutsche Medizinische Wochenschrift. No. 38.
Sept. 17, 1908.

1. Meyer, E. *The Treatment of Hysteria.*
2. *Spengler, C. *Tuberculous Immunity and the Treatment of Tuberculosis with the Immune Blood of Tuberculous Patients.*
3. Kuhnt, H. *The Relations of the Diseases of the Nose, of its Accessory Sinuses and of the Nasopharynx to those of the Eye.* (Conclusion.)
4. Sandor, S. *Inflammatory Tumor of the Abdominal Wall arising about a Foreign Body perforating Outward from the Intestinal Canal.*
5. *Reinecke. *Necrosis of Myoma during Pregnancy.*
6. Samson, J. W. *Conception and Menstruation.*
7. Feilchenfeld, W. *Numerous Affections of the Nervous System in a House Epidemic of Diphtheria.*
8. Davidsohn, F. *Radium Emation as a Curative Agent.*
9. Field. *A Convenient and Easily Cleaned Stomach Aspirator.*
10. Flügge. *The Draft of a Code of Criminal Procedure with New Points in the Statute Law.*
11. Olshausen, Th. *The Imperial Verdict on the Question of Artificial Impregnation.*

2. Spengler considers that the immune bodies in tuberculosis are chiefly contained in the red blood cells and somewhat in the white cells and platelets. The serum simply acts as carrier to the point of attack. He gives a method of separating the serum, erythrocytes, and leucocytes and platelets.

In tuberculous immunity lysins and antitoxins are the important factors. These factors are present in the cells much more than in the serum. The best lytic effect is obtained at great dilutions. The antitoxic effect is measured by rabbit inoculation.

The author then tells about the preparation of a substance from the blood of tubercular immune men or animals which can be used therapeutically. This substance he speaks of as "J-K." This material "J-K" is antitoxic, antifebrile and bacteriolytic. After taking it the patient's appetite improves, the fever diminishes, the tubercle bacilli become less in number and finally the toxic pulse is the last to regulate itself. The immune substance of either man or beast is immunizing and healing to either man or beast when obtained chemically pure.

5. Reinecke reports a case of necrosis of a myoma of the uterus during pregnancy. He mentions the rarity of this circumstance and goes over some of the other reported cases. The dangers that may arise from such a condition are poisoning from absorption of the albuminous products of degeneration and inflammation from bacterial invasion. The bacterial invasion comes through the intestinal walls which lie against the tumor and are influenced by its necrosis so that bacteria may penetrate them. [C. F., Jr.]

Zeitschrift für Klinische Medizin. Bd. 66.
Heft. 1 and 2.

1. *Eppinger, H., Falta, W., and Rudinger, C. *The Correlation of Glands with Internal Secretion.*
2. Faber, K., and Lange, G. *The Pathogenesis and Etiology of Chronic Achylia Gastrica* (Continued article.)
3. Uskoff, L. *The Sphygmotonograph.*
4. Sihle, M. *A Critic on the Theory of Von Basch concerning Passive Hyperemia of the Lungs.*
5. *Weiss, P. *Determinations of the Endogenous and Exogenous Uric Acid in Gout and Other Diseases.*
6. *Granström, E. *The Direction of the Dicrotic Wave.*
7. *Jochmann, G., and Kantorowicz, A. *Antitrypsin and Antipepsin in Human Blood Serum.*
8. *Schirokauer, H. *Further Contributions to the Salt Metabolism in Experimental Nephritis.*
9. *Jagic, N. *A Case of Adams-Stokes Disease.*
10. Ortner, N. *Remarks on Dicrotism in Aortic Insufficiency.*
11. Arneth, J. *The Neutrophiles in Infectious Diseases.*

1. This article by Eppinger, Falta and Rudinger is a very important contribution to our knowledge of the relation of the pancreas, the thyroid and the adrenal glands to one another. In a series of animal experiments they have discovered many new facts bearing on the correlation of these organs and have drawn up a very ingenious working theory to account for the phenomena observed. The effect of extirpation of the thyroid was a marked decrease in the nitrogenous metabolism. The feeding of fats and carbohydrates to fasting thyroidectomized dogs did not diminish the excretion of nitrogen as is the case in normal fasting animals. The feeding of thyroid glands, however, compensated for the loss of the organ, producing a negative N balance, and the addition of carbohydrates to the diet decreased the destruction of proteids, as in the normal. They found that adrenalin even in fasting dogs causes glycosuria and increases the nitrogenous metabolism. In the case of thyroidectomized dogs, on the other hand, they were entirely unable to obtain glycosuria by the injection of adrenalin, even if sugar were simultaneously administered. The adrenalin, however, did cause a temporary decrease in the excretion of N. After feeding thyroid extract to the thyroidectomized animals, adrenalin caused glycosuria, as in the normal. Thyroidectomy, however, did not prevent the occurrence of glycosura from phloridzin, a drug which causes the excretion of sugar by its action on the kidneys. The injection of adrenalin to dogs without a pancreas caused a marked increase in the excretion of sugar and an increase of the quotient $\frac{D}{N}$ $\left(\frac{\text{dextrose}}{\text{nitrogen}}\right)$. It also increased the nitrogen excretion. In another series of animals, the thyroid was extirpated first and later the pancreas. The effect of the previous removal of the thyroid was to mitigate the course of the pancreatic diabetes. The fasting nitrogenous metabolism was only moderately increased instead of threefold, the loss of weight was relatively small and the quotient $\frac{D}{N}$ higher than in pure pancreatic diabetes.

On the basis of these experimental facts, the authors draw up the following ingenious theory: The pancreas and the thyroid each exert an inhibiting influence on the other, and the same is true of the pancreas and the chromaffin system (of which the medulla of the adrenal gland is the chief constituent). The thyroid and the adrenal, on the other hand, have a stimulating action upon one another. By means of this theory they explain all the foregoing facts in an extremely plausible manner. The effect of the removal or loss of function of any one of these three glands will consist of two factors, — the one direct and owing to the lack of the corresponding internal secretion; the other indirect, owing to the effect on the other two glands. Thus, extirpation of the thyroid, by removing the inhibition on the pancreas, will lead to increased function of that organ, and by the loss of the stimulating influence on the adrenal will cause decreased function there; hyperthyroidism will cause decreased function of the pancreas and increased function of the adrenal. These theoretic assumptions are borne out by the facts as found by the authors. As a direct result of athyroidism, there was decrease of proteid, fat and salt metabolism, and indirectly there was overfunction of the pancreas and hence lack of glycosuria after injection of adrenalin, the increased internal secretion of the pancreas being able to break down all the sugar mobilized by adrenalin and, therefore, to prevent its excretion in the urine. In the case of extirpation of the pancreas, the direct result is inability to consume sugar and hence glycosuria, and indirectly there is loss of inhibition of the thyroid, overfunction of the same and increased proteid, fat and salt metabolism. The loss of inhibition on the adrenal leads to increased mobilization of carbohydrates and thus increases the intensity of the sugar excretion. In a similar way, the injection of adrenalin, which imitates hyperfunction of this gland, causes directly an increased mobilization of carbohydrates and indirectly, by inhibition of the pancreas, a decreased ability to consume sugar, and the two working together result in glycosuria; by increased stimulation of the thyroid, it causes an increase of proteid metabolism. The authors further discuss the relation of these glands to the sympathetic and to the autonomous nerves (e.g., oculomotor and vagus nerves). They found that the sugar puncture is analogous to adrenalin diabetes and produces no glycosuria in animals which have had their thyroids removed. The internal secretion of the pancreas is probably under the domination of the vagus nerve, for by injecting pilocarpine, which is a stimulant to this nerve, they were able to prevent the appearance of sugar after injection of adrenalin; they explain this as due to increased function of the pancreas leading to complete consumption of the sugar liberated by adrenalin. This assumption was strengthened by the following experiment: Adrenalin and atropin were injected simultaneously to thyroidectomized dogs and glycosuria ensued, whereas the injection of adrenalin alone to thyroidectomized animals never caused glycosuria. That is to say, paralysis of the vagus (by atropin) led to diminished pancreatic secretion.

5. Weiss reports quantitative determinations of endogenous and exogenous uric acid in four cases of gout and allied diseases. He recommends the method of Kowarsky as sufficiently accurate for clinical purposes.

6. Granström comes to the conclusion that the direction of the dicrotic wave is from the center towards the periphery. He based his conclusion on the results of auscultation of the brachial artery below the cuff of the Riva-Rocci manometer.

7. Jochmann and Kantorowicz investigated the content of the blood serum in antitrypsin and antipepsin by means of the serum plate method. They conclude that antitrypsin and antileucocyte ferment are identical and that therefore the corresponding ferments are at least very closely allied to one another. Both of these antiferments are constantly present in normal serum and show variations in disease which are not constant.

8. Schirokauer reports the result of determinations of various salts in experimental nephritis due to uranium nitrate, which is accompanied by hydrops. He found an increased percentage of water in the muscles and liver corresponding to the general retention of water, and an increase of the total ash. The blood showed a decrease in the total amount of ash, but an increase in the sulphates

9. Jagic reports a typical case of Adams-Stokes disease or heart block, occurring in a man of thirty years. The cause was found to be a gumma of the interventricular septum, which had interrupted the bundle of His. There was no reason to suppose during the life of the patient that he had had syphilis. Heart block occurring in *young* people is usually due to syphilitic lesions affecting the bundle of His, and this etiology should, therefore, always be thought of in such cases. [W. T.]

Revue de Chirurgie.

September, 1908.

1. *Estor, E., and Massabuav, G. *So-Called Multilocular Branchiogenic Cysts of the Neck.*
2. *Guibé, M. *Gangrene of the Rectum of Spontaneous Appearance.*
3. *Jacob, O., and Trénel, L. *Primary Hernial Tuberculosis of Saccular Form.*
4. Veyrassat. *Hour-Glass Stomach and its Surgical Treatment.* (Conclusion.)

1. The authors report, with excellent microscopic plates, a polycystic tumor of the neck with complex structure, and from an historical review of the literature collect 16 other similar cases characterized by the simultaneous presence of epithelial, endothelial and lymphatic tissue. They then make an elaborate investigation of the relation of this group to other known forms of multilocular cervical cyst, and discuss their probable pathogenesis. They believe that the tumors in question are distinct from the polycystic parathyroid tumors and from the serous multilocular congenital branchial cysts, and represent a special category of cystic embryomata of the mixed tumor type. Their conclusion, if true, seems to possess only academic interest.

2. Guibé reports a case of primary spontaneous gangrene of the rectum in a woman of forty-three, and collects from the literature 6 similar cases of complete and 3 of partial gangrene. As a cause of the condition, he suggests arteritis or embolism of the superior hemorrhoidal artery, but himself acknowledges that there are objections to this explanation. Unfortunately no examination of the vessels was made at autopsy in his case. When the gangrene is partial, colostomy may save life; but complete gangrene of the rectum has been uniformly fatal.

3. The writers report a case of primary tuberculosis of the hernial sac, illustrating one of the three varieties of hernial tuberculosis described by Jonnesco in the *Revue de Chirurgie* for 1891 (Vol. xi, pp. 185 and 455), and collect from the literature 10 other similar cases in which the tuberculous process was limited to the hernial sac, without general peritoneal involvement or demonstrable tuberculous focus elsewhere in the body. Trauma to an irreducible or ill-retained hernia seems to be an important etiologic factor. Possibly the infection may be of intestinal origin through lymphatic channels, but there are no data whether it be generally of the bovine or of the human type. [R. M. G.]

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Obituary.

ALONZO BRAYTON BALL, M.D.

Dr. Alonzo Brayton Ball, of New York, died suddenly on Oct. 24. He was graduated from the College of Physicians and Surgeons in 1863, and later became associated in practice with the late Dr. Abram DuBois. Dr. Ball was one of the best-known general practitioners in New York. For many years he had had a very large practice among the best class of patients, particularly the older residents of the city, by whom he was held in the highest esteem, both on account of his professional attainments and his many sterling qualities of character. For a considerable time he was professor of clinical medicine at the College of Physicians and Surgeons, now the medical department of Columbia University, and later he was made professor emeritus. He was a charter member of the Medical Association of the Greater City of New York, and also one of the first members of the Society of American Physicians. At the time of his death he was consulting physician to the New York, the General Memorial and St. Luke's hospitals, to which institutions he had formerly been attending physician.

RECORD OF MORTALITY

For the Week ending Saturday, Oct. 17, 1908.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	—	—
Chicago	550	164	Waltham	7	2
Philadelphia . . .	—	—	Pittsfield	—	—
St. Louis	—	—	Gloucester	7	2
Baltimore	175	43	Brookline	4	—
Cleveland	—	—	North Adams . .	5	1
Buffalo	—	—	Chicopee	1	—
Pittsburg	—	—	Northampton . .	6	2
Cincinnati	—	—	Medford	0	—
Milwaukee	—	—	Beverly	4	—
Washington . . .	—	—	Leominster . . .	4	1
Providence . . .	—	—	Hyde Park . . .	5	3
Boston	200	78	Melrose	1	0
Worcester	33	11	Newburyport . .	—	—
Fall River	46	22	Woburn	3	0
Cambridge	25	16	Westfield	7	—
Lowell	29	15	Marlboro	3	0
Lynn	20	4	Revere	3	1
New Bedford . .	23	9	Attleboro	5	2
Springfield	19	7	Peabody	—	—
Lawrence	26	16	Adams	2	1
Somerville	16	5	Clinton	3	2
Brockton	14	7	Gardner	4	—
Holyoke	10	5	Milford	—	—
Malden	5	3	Watertown . . .	3	1
Chelsea	9	4	Plymouth	—	—
Newton	4	3	Weymouth . . .	2	1
Salem	12	4	Framingham . .	3	1
Haverhill	9	2	Southbridge . . .	2	—
Fitchburg	11	1	Wakefield	—	—
Everett	3	1	Webster	—	—
Taunton	13	2	Arlington	3	1

LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND OTHER OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED OCT. 14, 1908.

Kerr. J. W., assistant surgeon-general. Granted seven days' leave of absence from Oct. 16, 1908.

Bailhache. P. H.. surgeon. Leave of absence for twenty days from Sept. 21, 1908, amended to read fifteen days from Sept. 21. 1908.

Stoner. G. W., surgeon. Granted fifteen days' leave of absence from Oct. 8. 1908.

Nydegger, J. A.. passed assistant surgeon. Leave of absence for twenty-three days from Sept. 19, 1908, amended to read twenty-two days from Sept. 19, 1908.

Heiser. V. G.. passed assistant surgeon. Granted thirty days' leave of absence while en route to join station at Manila, P. I.

Burkhalter. J. T., passed assistant surgeon. Granted seven days' leave of absence from Oct. 1, 1908.

Stimson. A. M., passed assistant surgeon. Directed to proceed to Santa Ana and points in vicinity of Los Angeles, Cal., upon special temporary duty.

Smith, F. C.. passed assistant surgeon. Granted seventeen days' extension of leave of absence from Oct. 18, 1908.

Salmon. T. W.. passed assistant surgeon. Directed to report to commanding officer revenue cutter "Gresham," Oct. 10. 1908, for temporary duty.

Frost, W. H.. assistant surgeon. Granted fifteen days' leave of absence from Oct. 11. 1908.

Abbott. F. C.. acting assistant surgeon. Granted fourteen days' leave of absence from Oct. 11. 1908.

Houghton. M. W., acting assistant surgeon. Granted nine days' leave of absence from Oct. 11. 1908.

Rogers. Edward. pharmacist. Granted three days' leave of absence from Oct 3. 1908. under paragraph 210, Service Regulations.

Scott. E. B., pharmacist. Granted twenty days' leave of absence from Oct. 23. 1908.

Ryder. L. W.. pharmacist. Granted two days' leave of absence from Oct. 9. 1908. under paragraph 210. Service Regulations.

Gibson. F. L.. pharmacist. Leave of absence for thirty days from Sept. 8, 1908. amended to read sixteen days from Sept. 8. 1908.

Troxler. R. F.. pharmacist. Leave of absence for seven days from Sept. 28, 1908, amended to read five days from Sept. 28, 1908.

Holt. E. M., pharmacist. Granted thirty days' leave of absence from Oct. 19. 1908.

Spangler. L. C.. pharmacist. Granted thirty days' leave of absence from Nov. 3. 1908.

Megaw, H., pharmacist. Leave of absence for thirty days from Sept. 1, 1908, amended to read twenty-one days from Sept. 1, 1908.

BOARD CONVENED.

Board of medical officers convened to meet at the Hygienic Laboratory, Oct. 19, 1908, on call of chairman, for the purpose of examining pharmacist C. O. Sterns, to determine his fitness for promotion to the grade of pharmacist of the second class. Passed Assistant Surgeon J. F. Anderson, chairman; Passed Assistant Surgeon Joseph Goldberger, recorder.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING OCT. 24, 1908.

Ricker, G. A., acting assistant surgeon. Appointed acting assistant surgeon from Oct. 16, 1908; ordered to course of instruction at the Naval Medical School, Washington, D. C.

Donelson, M., assistant surgeon. Detached from the "Stringham" and ordered to the "Macdonough.

Morris, L., surgeon. Ordered to the Naval Station, Cavite, P. I. (Orders issued by Commander, Third Squadron, Pacific Fleet.)

Carpenter. D. N., surgeon. Detached from the Naval Station, Cavite, P. I., and ordered home.

SOCIETY NOTICE.

Boston Society for Medical Improvement. — The first meeting of the Society will be held in Sprague Hall, Medical Library Building, on Monday, Nov. 9, 1908, at 8.15 p.m. Program: "The Pharmacopœia." Dr. F. G. Wheatley, North Abington. (By invitation.) "Fresh Serum: Its Use and the Technique of Obtaining." Dr. Timothy Leary. (By invitation.) "Peripheral Operations for the Relief of Facial Neuralgia." Dr. H. H. Germain. (By invitation.)

Daniel Fiske Jones, M.D., *Secretary.*

BOOKS AND PAMPHLETS RECEIVED.

Treasury Department. Hygienic Laboratory. Bulletin No. 44. Report No. 2 on the Origin and Prevalence of Typhoid Fever in the District of Columbia (1907). By M. J. Rosenau, L. L. Lumsden and Joseph H. Kastle. Washington, 1908.

The Supposed Benefical Effects of Ozone: a Popular Medical Fallacy. By Theo. Wm. Schaefer, M.D. Reprint.

The Choice of Methods between the Use of the Roentgen Ray and the High-Frequency Currents in Therapeutics. By Albert C. Geyser, M.D. Reprint.

Pathogenic Micro-Organisms, including Bacteria and Protozoa. By William Halock Park, M.D., assisted by Anna W. Williams, M.D. Third edition, enlarged and thoroughly revised. Illustrated. New York and Philadephia: Lea & Febiger. 1908.

On Means for the Prolongation of Life. Third and enlarged edition of a lecture delivered before the Royal College of Physicians on Dec. 3, 1903. By Sir Hermann Weber, M.D., F.R.C.P. London: John Bale, Sons & Danielsson, Ltd. 1908.

Therapeutics: Its Principles and Practice. By Horatio C. Wood, M.D., LL.D. Thoroughly revised and rewritten by Horatio C. Wood, Jr., M.D. Fourteenth edition. Illustrated. Philadelphia and London: J. B. Lippincott Co. 1908.

Surgery of the Ureter: An Historical Review (1585-1905). By Benjamin Merrill Ricketts, Ph.B., M.D., LL.D. Cincinnati. 1908.

Trichinosis of the Upper Respiratory Passages, with Report of Cases. By John Edmund Mackenty, M.D. Reprint.

High-Frequency Currents. By Frederick Finch Strong, M.D. Illustrated. New York: Rebman Co. 1908.

Oxford Medical Publications. Diseases of the Eye. By M. Stephen Mayou, F.R.C.S. Illustrated. London: Henry Frowde; Hodder & Stoughton. 1908.

Military Hygiene. A Manual of Sanitation for Soldiers. By R. H. Firth. Illustrated. London: J. & A. Churchill. Philadelphia: P. Blakiston's Son & Co. 1908.

Report on the Prevention of Malaria in Mauritius. By Roland Ross, D.P.H., F.R.C.S., D.Sc., LL.D., F.R.S., C.B.

The Brain of Rhinochimaera. By Burt G. Wilder. Reprint.

The Educational Uses of Sharks and Rays, Especially the Acanth (Squalus Acanthias, "Horned Dogfish"). By Burt G. Wilder. Reprint.

Address.

A CONSIDERATION OF THE INTRODUCTION OF SURGICAL ANÆSTHESIA.*

BY WILLIAM H. WELCH, M.D., LL.D.,
Professor of Pathology, Johns Hopkins University, Baltimore, Md.

It is a happy conception of the trustees and staff of the Massachusetts General Hospital to set apart the sixteenth of October as "Ether Day," and to provide for the annual public celebration, in this historic place, of the anniversary of that most beneficent gift of medicine to mankind, — the introduction of surgical anæsthesia. I esteem it a high honor to be invited to deliver the annual address in commemoration of the great event which took place within these walls sixty-two years ago to-day. Of the significance of this event there can be no question, whatever controversy there may be concerning the exact share of all who participated in the discovery of surgical anæsthesia.

The attendant circumstances were such as to make the operation performed on Oct. 16, 1846, in the surgical amphitheater of this hospital, by John Collins Warren, upon the patient, Gilbert Abbott, placed in the sleep of ether anæsthesia by William Morton, the decisive event from which date the first convincing, public demonstration of surgical anæsthesia, the continuous, orderly, historical development of the subject, and the promulgation to the world of the glad tidings of this conquest of pain.

Had this demonstration or any subsequent one of like nature failed of success, it is improbable that we should have heard much of claims to the prior discovery of surgical anæsthesia. Often as the story has been told, and full as it is of bitter controversy, I may be permitted to recall to your minds enough of the preceding discoveries and efforts to indicate the proper historical setting of the event which we celebrate.

When and by whom artificial anæsthesia was discovered is unknown. It is certain that the old Greek and Roman physicians were acquainted with the power of various narcotic drugs to produce insensibility to pain and that narcotic potions and even their fumes were frequently administered from ancient times onward before a surgical operation in order to lessen the sufferings of the patient. At a later period more limited use was sometimes made of certain devices for the same purpose, such as compression of the carotids, the tightening of a tourniquet and pressure upon nerve trunks. The Elizabethan dramatist, Middleton, even portrayed an age of surgical anæsthesia, when he wrote in one of his plays:

> "I'll imitate the pities of old surgeons
> To this lost limb, who, ere they show their art,
> Cast one asleep; then cut the diseased part."

But we know that none of these procedures, and "not poppy, nor mandragora, nor all the drowsy syrups of the world" were safe, effective and available agents to benumb the senses during a surgical operation.

The history of the events connected with modern surgical anæsthesia begins with the remarkable development of chemistry in the latter part of the eighteenth century, due in large measure to the discovery and study of gases, and especially with the discovery of nitrous oxide by Priestley in 1776 and the investigation of its properties by Humphry Davy at the end of the century in Dr. Beddoes' "Pneumatic Institute" near Bristol, England. At this period there was widespread interest in England in the study of the effects of inhalation of gases of different sorts, particularly of the newly discovered "vital air," or oxygen and nitrous oxide, and exaggerated ideas were entertained of their medicinal virtues, so that there arose a school of pneumatic medical practitioners. The institute of the leader of this school, Dr. Beddoes, is now chiefly remembered as the place which afforded to Humphry Davy, then a young man who had commenced the study of medicine, the opportunity for the first manifestations of his remarkable genius for discovery in the physical sciences.

The particular discovery which here concerns us is that of the intoxicating, and especially the anæsthetic, properties of nitrous oxide gas, made in Dr. Beddoes' institute and vividly portrayed by Davy in his "Researches, chemical and physical, chiefly concerning nitrous oxide and its respiration," published in 1799. Here is found the memorable and often quoted sentence: "As nitrous oxide in its extensive operation seems capable of destroying physical pain, it may probably be used with advantage during surgical operations in which no great effusion of blood takes place." It seems to us to-day amazing that this pregnant suggestion from such a source should have passed unheeded and that the application of Davy's discovery should have been delayed for over forty years. Davy's interests and activities were soon transferred at the Royal Institution to fields remote from practical medicine, and it does not appear that he made any further effort to bring the suggestion to the attention of surgeons.

Observations and tests of the intoxicating effects of the inhalation of nitrous oxide were from this time on frequently made, and there is repeated mention of its capacity to produce insensibility to pain. One of the most dramatic situations, unnoticed hitherto in the voluminous literature on the history of anæsthesia, is the occasion when, in March, 1800, William Allen, the accomplished lecturer on chemistry at Guy's Hospital, demonstrated, in the presence of Astley Cooper and others, the phenomena of inhalation of nitrous oxide, noting especially the loss of sensation to pain. The description was recorded by Allen in his diary and is quoted by Wilks and Bettany in their "Biographical History of Guy's Hospital." The great surgeon had eyes but he saw not the revelation which a similar observation brought forty-four years later to the poor and unknown dentist, Horace Wells, in Hartford, Conn.

The narcotic properties of ether — a body known of American medicine to mankind and one of the most beneficient ever conferred. There is a growing tendency to celebrate the gift with too little thought of the giver. This easy procedure is doubtless due to the difficulty of meting out equal and exact justice to all concerned and to disinclination to stir the ashes of old controversies. This disposition of the matter, however, is unjust, and it seems to me that every effort should be made to determine the share and the credit belonging to each contributor to the discovery and the introduction of surgical anæsthesia, and to secure, so far as possible, an agreement of opinion in this important matter. We are not likely to come into possession of important new facts, but their unbiased presentation in historical order, and the consideration of their relative values and significance, should clarify professional and public opinion and enable us to give honor where honor is due. One of the most attractive and instructive accounts of the ether controversy is the chapter on this subject in Dr. Mumford's charming "Narrative of Medicine in America," where references will be found to more detailed statements and the historical documents. I have endeavored in this brief and imperfect historical survey incidentally to express in some measure my personal judgment of the relative importance of the leading contributions, and my conclusions are in essential agreement with those of Dr. Mumford when he says that "time and history are at last placing the honor where it belongs, — with Morton, who for his errors most certainly was punished beyond his deserts." But whatever may be the differences of opinion, one fact of the first historical importance stands and will continue to stand unshaken: the world received the gift of surgical anæsthesia as the immediate and direct result of the convincing, public demonstration of its efficacy in this hospital on the sixteenth of October, 1846.

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* Address delivered at the Massachusetts General Hospital on the sixty-second anniversary of Ether Day.

In the bestowal of honors the name of the eminent surgeon, John Collins Warren, should not be forgotten, who had the courage to subject his patient to unknown risks in the hope, which was far removed from any assurance, that a great blessing was about to be conferred upon suffering humanity. Great indeed was his joy in the fulfullment of this hope.

Turning now from these historical considerations, permit me to direct your attention to certain attributes of the discovery of surgical anæsthesia, and certain lessons to be drawn from it.

It is to be emphasized that this discovery was a triumph of the experimental method, albeit man was made the principal subject of experiment. Animal experimentation played a part, for I see no reason to question, although this has been done, Morton's statements that during the summer of 1846 he successfully anæsthetized dogs and other animals with ether, and that the results of these experiments influenced his trial of the anæsthetic upon human beings. It must, however, be admitted that the production of unconsciousness in man by ether had not been preceded by such numerous and properly conducted experiments on animals as were required to furnish adequate conception of its effects or its possibilities of danger. Such experiments would have yielded knowledge of this character, and we know that at the present time as full information as possible would have been secured from this source before administering to man an agent with unknown possibilities of danger; one, indeed, in this instance stated in textbooks of the time to be dangerous to life when pushed to the point of producing complete unconsciousness. If the opponents of animal experimentation attempt to utilize, as they have done, the relatively small share of this method of advancing knowledge in the discovery of surgical anæsthesia, the only implication of the argument is that they would substitute experiments upon human beings for those upon animals, for only from one or the other of these sources could the discovery have been derived.

We place, then, the discovery of surgical anæsthesia with such other great discoveries as those of the circulation of the blood, of vaccination against smallpox, of antiseptic surgery, of antitoxin and many more among the great contributions to the welfare of mankind made by the use of that indispensable aid to the advancement of medical science art, — the experimental method of investigation.

A quite different line of thought suggested by the discovery of surgical anæsthesia is the aid to medicine which comes often in the most unexpected ways from discoveries in other sciences. Not only did chemistry furnish the anæsthetic agents, but the wonderful discoveries of pneumatic chemistry, which revolutionized the whole science of chemistry in the latter part of the eighteenth century, were the immediate stimulus to the study of the physiological effects of various gases, a study which led promptly to the recognition of the anæsthetic properties of nitrous oxide gas, and which, continued through half a century, resulted finally in the demonstration of the applicability of certain of these gases for surgical anæsthesia. Here, as for so many other gifts, medicine owes a large debt to chemistry, as she does likewise to physics, as may be exemplified by the applications of the Rœntgen rays in medical and surgical diagnosis.

While it does not appear to us that the discovery, or, as some prefer to say, the invention, of surgical anæsthesia required any remarkable intellectual endowments or high scientific training, and it cannot be said that Long, Wells or Morton were possessed of these, it was the outcome of a spirit of inquiry, of keen observation, of boldness, of perseverence, of resourcefulness, of a search for means to improve a useful art, of interest in the practical rather than the theoretical, —all traits more or less characteristic of the American mind, and I do not think that it was wholly an accident that our country should have given birth to the art of painless surgery. I find evidence of this view in the fact that not one but several Americans were working independently upon the same problem and that the solution of the problem is an exclusive achievement of our countrymen.

The circumstance that a long-awaited discovery or invention has been made by more than one investigator, independently and almost simultaneously, and with varying approach to completeness, is a curious and not always explicable phenomenon familiar in the history of discovery, and, as in the case of surgical anæsthesia, it has been the source of endless and often bitter controversy. Sooner or later, often long after the death of the participants, historical justice has usually come.

The approach to a great discovery is long and devious and marked by the capture of a barrier here and an outpost there; when the fullness of time has come the final assault is often made by more than one person, and the victor stands upon the shoulders of many who have preceded him, — it may be of many who have fallen by the way.

The period when surgical anæsthesia was discovered was one full of the spirit of scientific inquiry and the opening of new paths for medicine. There had come to be a general realization of the fact that the only trustworthy sources of knowledge are exact observation and experiment. The great impulse derived from the introduction of the new methods of physical diagnosis and the systematic anatomical study of disease had shortly before reached this country from France, and was especially active in this city. Experimental physiology and pharmacology had entered upon fruitful fields of exploration through the work of Magendie and of Johannes Müller and their pupils. The foundations of cellular pathology were soon to be laid. While it is not apparent that those directly concerned in the discovery of surgical anæsthesia were influenced by the new spirit and the new ideas, they contributed an aid to experimental research of immeasurable service. It was fortunate indeed for the public demonstration, reception and promotion of the discovery of surgical anæsthesia that it was revealed to that able group of surgeons and physicians then connected with this hospital, who were imbued with the new scientific spirit and with the best traditions of the profession, and were active in the advancement of the art.

A consideration of some interest connected with the introduction of surgical anæsthesia is the influence of environment and of material conditions upon discovery. Here we find illustrated the fact, of which there are many examples, that apparently adverse surroundings and average intellectual endowment without special scientific training constitute no barrier to the making of discoveries of the highest importance to mankind. The country doctor in Georgia, with only an ordinary general and professional education, and the two poor and previously unknown dentists of Hartford and of Boston, are the chief actors in the drama. It is not surprising that dental surgeons should have been particularly eager in the quest of anæsthesia, for there is no more excruciating agony than the pulling of an aching and sensitive tooth, and the short duration of the operation and the suffering would suggest possibilities of success which might not be variable in a prolonged surgical operation. Nor is it surprising that American dentists should have been most active in this search, when we recall the remarkable inventiveness and skill which have characterized their work and have given to American dentistry a foremost position for this branch of surgery.

On the other hand, however, the share which the Massachusetts General Hospital and its surgeons had in the demonstration, promulgation and acceptance of surgical anæsthesia exemplifies the value of a favorable environment and was largely responsible for the complete success which Morton achieved over his predecessors in discovery. The manner in which the surgeons of this hospital at that time — including John Collins Warren, George Hayward, Henry J. Bigelow and J. Mason Warren — received and advanced Morton's demonstration of anæsthesia must always be a source of pride, not only to this hospital, but to our country and the world. Especially are they to be commended for their insistence upon disclosure of the nature of the secret letheon. No better example can be found of the service which a great hospital and its professional staff can render in furthering discovery and in advancing and spreading new knowledge and new methods important to the medical and surgical art than that furnished by the Massachusetts General Hospital in its relations to the demonstration and introduction of surgical anæsthesia, and its officers and staff have ever remained faithful to the high ideals then exemplified.

Worthy of especial mention is the first announcement to the world in a scientific journal of the great discovery, by Henry J. Bigelow, in an important paper read before the American Academy of Arts and Sciences, on Nov. 3, 1846, and published in the Boston Medical and Surgical Journal on Nov. 18, and likewise Oliver Wendell Holmes's delightful part in coining the word "anæsthesia," and, indeed, his whole attitude of lively, sympathetic and imaginative interest, as expressed in all that he said and wrote concerning the new discovery. A sentence often quoted will suffice to illustrate Dr. Holmes's appreciation of the benefits of the discovery, as well as his powers of vivid description:

"The knife is searching for disease, the pulleys are dragging back dislocated limbs, nature herself is working out the primal curse which doomed the tenderest of her creatures to the sharpest of her trials, but the fierce extremity of suffering has been steeped in the waters of forgetfulness, and the deepest furrow in the knotted brow of agony has been smoothed forever."

The reception of the joyful discovery was everywhere enthusiastic, although not without some of the mutterings which come from those petrified against all innovations, as appears from remarks made by Professor Miller to his class in London not long afterward. "The profession," he says, "were surprised, excited, charmed in the mass, and more especially those on the junior side of the grand climacteric. The elderly gentlemen had their preconceived and heretofore settled notions sadly jostled and disturbed. Not a few grew irritable and resented the interference; they closed their ears, shut their eyes and folded their hands; they refused to touch or in any way meddle with the unhallowed thing; they had quite made up their minds that pain was a necessary evil and must be endured; they scouted on the attempted innovation and croaked that 'no good could come of it.' On, notwithstanding, sped the movement."

One of the most extraordinary aberrations of the human mind was manifested by the raising of religious scruples, particularly against the abolition of pain in childbirth. Sir James Simpson, the discoverer of the anæsthetic uses of chloroform, and of important service in advancing the art of anæsthesia, quotes from the letter of a clergyman, who declares that chloroform is "a decoy of Satan, apparently offering itself to bless women, but in the end it will harden society and rob God of the deep earnest cries which arise in time of trouble, for help." If this clergyman remembered the primal curse, he forgot the earliest example of anæsthesia when, in the resection of a rib for the creation of Eve, "the Lord God caused a deep sleep to fall upon Adam."

The immediate immeasurable benefits conferred by anæsthesia in the relief of human suffering were realized more fully and were expressed more adequately by the generation which knew by experience the contrast between the old surgery and the new painless surgery than is possible for us to-day. But of all the blessings which were to flow from this priceless gift there could be only a feeble conception sixty years ago, and as this flow is unceasing, we, ourselves, cannot fully estimate them. Anæsthesia and antisepsis, the two greatest boons ever conferred upon the surgical art, have made possible the marvelous developments of surgery during the last forty years, and only by their aid can surgery continue to advance.

I have somewhere seen a statement to the effect that the introduction of anæsthesia and of antisepsis have made the practice of surgery so certain and so easy that qualities of hand and of mind which were essential to high success in the practice of pre-anæsthetic surgery, and which were exhibited by the surgical heroes of old, are no longer necessary, so that even commonplace mortals can now become surgeons. There is perhaps a half truth in this, but it is more than compensated for by the demands upon the skill and judgment of the modern surgeon in the performance of operations vastly more difficult than any which were possible or were dreamt of in the old days.

What surgery was before the days of anæsthesia, and what anæsthesia has done for surgery and for obstetrics, are subjects which were presented at the semi-centennial anniversary of anæsthesia in this hospital by Dr. Ashhurst, Dr. Cheever and Dr. Reynolds, men far more competent to deal with them than I am. On the same occasion I had the privilege of speaking on the influence of anæsthesia upon medical science, and I shall not now consider this aspect of the subject, save to note again in passing that physiology and experimental medicine in their special fields have derived benefits from anæsthesia comparable to those enjoyed by surgery. That the useful knowledge which can come only from experimentation upon animals can now be acquired in by far the larger part without the infliction of pain is a source of immense satisfaction.

Ushered in by the discovery of vaccination against smallpox at the close of the eighteenth century, the greatest practical achievements in our art during the nineteenth century were anæsthesia, antiseptic surgery and the power to control infectious diseases resulting from the discovery of their living contagia — achievements surpassing the heritage of all the centuries which had gone before in the saving of human life and the alleviation of suffering. Of all these gifts of medicine to mankind, the sweetest and the happiest is that "death of pain" so beautifully portrayed at the semi-centennial anniversary of anæsthesia by our beloved poet-physician, Wier Mitchell:

"Whatever triumphs still shall hold the mind,
Whatever gift shall yet enrich mankind,
Ah! here no hour shall strike through all the years,
No hour as sweet, as when hope, doubt, and fears,
'Mid deepening stillness, watched one eager brain,
With Godlike will, decree the Death of Pain."

To these fine lines I can add, in closing, no more fitting words than those of John Collins Warren, who presided over the scene enacted here sixty-two years ago, a name ever to be honored in this place and throughout the civilized world. These words, spoken soon after the event which we celebrate, retain their vigor, freshness and truth to this day. He said:

"A new era has opened on the operating surgeon. . . . If Ambrose Paré and Louis and Dessault and Cheselden and Hunter and Cooper could see what our eyes daily witness, how would they long to come among us and perform their exploits once more. And with what fresh vigor does the living surgeon, who is ready to resign the scalpel, grasp it and wish again to go through his career under the new auspices. As philanthropists we may well rejoice that we have had an agency, however slight, in conferring on poor suffering humanity so precious a gift. Unrestrained and free as God's own sunshine, it has gone forth to cheer and gladden the earth; it will awaken the gratitude of the present and of all coming generations. The student, who from distant lands or in distant ages may visit this spot, will view it with increased interest, as he remembers that here was first demonstrated one of the most glorious truths of science."

Original Articles.

CONTRIBUTION TO THE SURGERY OF THE PROSTATE.*

Prostatectomy in the Treatment of Prostatic Abscess of Gonorrheal Origin.

BY SAMUEL ALEXANDER, M.D., OF NEW YORK,
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In an article upon "Prostatic and Periprostatic Abscess," read before the New York Surgical Society in October, 1904, and published in the *Annals of Surgery*, Vol. xli, 1905, I gave the views I then held upon the pathology of prostatic and periprostatic suppurations, and described a method of operative treatment which I had employed for several years for the relief of these conditions. In a subsequent article, entitled, "Observations upon the Cause and Treatment of Perineal Abscess, and of Peri-urethral Suppurations above the Triangular Ligament," read at the Montreal meeting of the American Association of Genito-Urinary Surgeons in June, 1905, and published in the New York *Medical Record*, Oct. 28, 1905, I called attention to the fact that perineal and ischiorectal abscess is usually associated with peri-urethral suppurations above the triangular ligament, either in the form of prostatic abscess, suppurative Littritis or suppurative Cowperitis.

In the paper upon "Prostatic and Periprostatic Abscess," I said, in regard to treatment, "I treat all forms of prostatic abscess by opening them into the prostatic urethra through a median perineal incision, whether the pus is confined within the capsule or has extended outside the capsule; whether it is above the triangular ligament or has extended into the perineum or into the ischiorectal fossa.

"The technic of the operation is simple. The patient is placed in the lithotomy position; the membranous urethra is opened upon a staff; the prostatic urethra is dilated and explored by the finger; a finger of the other hand is passed into the rectum, and between the two fingers the extent of the abscess cavity can be defined. It is easy to appreciate by the sense of touch the part of the prostatic urethra over the abscess cavity, and the openings when the abscess has discharged spontaneously into the urethra can be felt easily. The abscess is opened by tearing with the finger through the mucous membrane; its cavity is explored, any fibrous bands which traverse it are broken down, its floor is made level with the floor of the urethra and the opening in the urethral wall is enlarged sufficiently to insure thorough drainage. This is done entirely with the finger; to do it efficiently requires experience; rough and unskillful manipulation may cause severe hemorrhage. A catheter, No. 28 F. or No. 30 F., is introduced through the perineal wound into the bladder and is retained by tapes fastened to a waistband. One or two strips of gauze are passed alongside of the tube to the edge of the abscess cavity, but the latter is not packed. The tube and gauze I remove on the third day, sometimes on the second. The case is then treated as a perineal section."

This method of treatment was based upon the conception which I then had of the pathological anatomy of prostatic suppurations, gained from clinical observation of a large number of cases, and the examination of a number of pathological post-mortem specimens. I summarized my opinion as follows (p. 884):

"Prostatic abscess usually begins by the extension of an infection from the urethra into the gland ducts of the prostate. The infection sometimes may occur through a wound in the surface of the prostatic urethra, but infection through the gland ducts is more common. The suppuration may be confined to one or more of the excretory ducts, or the infection may extend into the alveoli and involve one or more of the prostatic lobules, and by extension it may destroy more or less of the entire gland.

"Each lobule of the prostate is composed of a number of tubular glands; the excretory ducts from these empty into the urethra on each side of the verumontanum. The excretory ducts are formed by the union of smaller ducts, and these latter communicate with the terminal gland alveoli. The secretion from the alveoli in each lobule is discharged into the urethra through one excretory duct. Infection, therefore, of a single duct should affect the tubes and alveoli in only one lobule, but when there is infection of more than one duct the foci of suppuration are multiplied, and these different foci frequently open into each other and form a single abscess.

"When an infection from the posterior urethra extends into the prostatic ducts, and preceding the formation of an abscess, there is an increase in the size of the prostate. This is caused by retention of the secretion in the alveoli communicating with the infected ducts which are obstructed by the swelling of the mucous membrane of the urethra and by an accumulation of inflammatory exudate. The gland tubes and alveoli are distended and impede by pressure the circulation in the veins. This edema of the prostate is increased by anything which increases the congestion, as, for example, by the frequency of urination and the straining to empty the bladder which are so characteristic of cases of acute prostatitis. This swelling of the prostate caused by retention of the secretion in the glands and by edema may subside without the formation of an abscess. The excretory ducts discharge the secretions into the urethra, the obstruction to the venous circulation is thus relieved and the swelling of the prostate subsides; or small abscesses may occur and open into the urethra and may thoroughly discharge their contents; but a small abscess which has opened into the urethra by an opening too small to efficiently drain it may be the source of great distress and annoyance to the patient. A persistent urethral discharge which relapses frequently is due often to this cause and there is always danger of recurrence or of an extension of the infection. Many cases of relapsing posterior urethritis, and many which are called chronic follicular prostatitis, are really cases of imperfectly drained prostatic abscess. A prostatic abscess may be confined within the capsule for a long time, sometimes for several weeks, without opening into the urethra. An abscess freely drained by a large natural opening into the urethra often may heal without operation, but abscesses of the prostate which open into the urethra spontaneously often require operation.

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* Read at the spring meeting of the New England branch of the American Neurological Association, Boston, May 12, 1908.

"Le Dentu's statement that abscesses of the prostate which open spontaneously into the urethra do so by openings proportionate to the size of the abscess cavity is contrary to my experience. Therefore, when an abscess of the prostate opens into the urethra spontaneously, an operation is required unless the drainage is efficient."

This method of treatment by perineal incision and drainage I continued to employ from 1900 until the close of 1905. The results which we obtained were most satisfactory in some cases, but in others, although the acute condition caused by the abscesses was relieved and the perineal wounds healed rapidly, there were a considerable number of cases which continued to have, even after operation, a persistent urethral discharge, and in a few cases patients returned after several months with another abscess in the prostate, necessitating a second operation through the perineum.

I therefore formed the opinion that either our technic was deficient, and that we did not efficiently drain the prostate, or that our views in regard to the pathological anatomy of prostatic suppurations were imperfect.

We made such changes in technic as seemed necessary, but the difficulty of gaining accurate data upon which to reconstruct our pathological anatomy was caused by the impossibility of collecting post-mortem specimens which would show the different stages of prostatic suppurations.

I had observed that in many of the post-mortem specimens of advanced prostatic suppuration which I had examined the prostate was the seat of multiple abscesses and that it would have been impossible by any operation to effectively open and drain all of these foci. The necessity of removing the diseased tissue *en masse* seemed clear. I began, therefore, to treat cases of prostatic abscess by prostatectomy performed through a median perineal incision, enucleating the lateral lobes through the wall of the prostatic urethra, a procedure identical to that which I have consistently employed in the treatment of prostatic enlargement since 1894.

I was further encouraged to do this because in several cases of prostatic abscess operated by perineal section and drainage I had found one or the other of the lateral lobes dissected almost free by the suppurative process, and in one or two of these cases I had been obliged to remove this loosened portion of the prostate.

This method of operative treatment by prostatectomy, the details of which I shall later describe, I have employed in many cases of prostatic abscess during the past four years.

We have operated upon a variety of abscess conditions, some in patients with prostatic enlargement, others in patients with urogenital tuberculosis, others in cases of long-standing filiform stricture, etc.; but the majority of operations have been upon patients with gonorrheal infection of the urethra, and as these cases differ in important particulars, both clinically and pathologically, from the others, I shall consider in this paper only this latter class, viz., *suppurative processes in the prostate which occur during the course of and as the result of gonorrheal urethral infection.* I have taken for a basis of this report only those cases operated upon in my service at Bellevue Hospital, because all of these patients have been treated under the same conditions. The operations have been performed in a public clinic, and the histories of all these cases are a matter of public record. In estimating the results of any operation, the general physical condition of the patients should also be considered. The patients at Bellevue Hospital are all charity patients; they come from the very poor of the community and are, as a rule, insufficiently nourished, poorly housed, and many of them have no permanent homes.

The following table will show the number of cases of prostatic abscess of gonorrheal origin operated upon during the years 1905, 1906, 1907, and during the two months (January and February), 1908, either by perineal section and drainage or by prostatectomy. The number of cases by each operation are arranged in parallel columns (Table I).

TABLE I.

CASES OF PROSTATIC ABSCESS OCCURRING DURING THE COURSE OF AND AS THE RESULT OF GONORRHEAL INFECTION OF THE URETHRA.

Treated at Bellevue Hospital. Dr. Alexander's Service.

PERINEAL SECTION AND DRAINAGE.		PROSTATECTOMY.	
Year.	No. of Cases.	Year.	No. of Cases.
1905	12 cases.	1905	2 cases.
1906	6 ,,	1906	13 ,,
1907	2 ,,	1907	17 ,,
1908 { Jan. Feb.	3 ,,	1908 { Jan. Feb. Mar.	4 ,,
	23 cases		36 cases

Total number of cases of prostatic abscess, 59.

This gives as a basis for comparison 23 cases of prostatic abscess treated by perineal section and drainage, and 36 cases of prostatic abscess treated by prostatectomy, a total of 59 cases of prostatic abscess.

The ages of the 59 patients subjected to these two methods of operation have been arranged in (Table II) on the following page.

It will be seen by reference to this table that nearly all of these patients were young men. Thirty-four cases, or nearly one half the entire number, were between the ages of eighteen years and twenty-five years; and 19 cases, or one third of the patients, were between the ages of twenty-

TABLE II.

PERINEAL SECTION AND DRAINAGE.		PROSTATECTOMY.	
Ages of Patients.	Cases.	Ages of Patients.	Cases.
Between 18–25 years,	10	Between 20–25 years,	14
,, 25–30 ,,	6	,, 25–30 ..	13
,, 30–35 ,,	4	,, 30–35 ..	7
,, 35–40 ,,	1	,, 35–40 .,	0
,, 40–44 ,,	2	,, 40–43 ..	2
Total,	23	Total,	36
Youngest patient, 18 years.		Youngest patient, 20 years.	
Oldest ,, 44 ,,		Oldest ,, 43 ,,	

five years and thirty years. Therefore, 45 cases, or nearly three fourths of the entire number, were under thirty years of age.

The prostatic abscess in these cases occurred during that period of life in which gonorrheal infection of the urethra is most common, and this fact, taken with the history of the urethral infections, is evidence that gonorrheá was the causative factor in the production of the prostatic suppuration.

Continuing the analysis of these cases, it is interesting to note the time at which prostatic abscess developed in the course of the gonorrheal infection. This is shown in the following table (Table III):

TABLE III.

	Perineal Section and Drainage. Cases.	Prostatectomy. Cases.
Abscess occurred during first gonorrheal infection,	10	16
Abscess occurred after two or more previous attacks of urethritis which were cured (?)	5	2
Abscess occurred in cases of relapsing urethritis in	8	18

It should be noticed that the prostatic abscess developed during the course of a first urethral infection 26 times, or in nearly one half the cases; in 7 cases the patients had had two or more new infections of the urethra preceding the abscess and had been pronounced cured of their infections.

Twenty-six, or nearly one half of the entire number, had had relapsing urethral discharge for varying periods, and in some of these cases there was a history of symptoms of previous prostatic suppuration.

The next table (Table IV) shows the frequency of perineal and ischiorectal abscess, associated with prostatic suppuration.

TABLE IV.

	Perineal Section and Drainage. Cases.	Prostatectomy. Cases.
Prostatic abscess was associated with perineal abscess in	7	7
With ischiorectal abscess in	1	4

It will be noted that perineal abscess usually arising from a co-existing Cowperitis or bulbitis or from the extension of periprostatic suppuration was present in 14 cases. In 5 cases there was complicating ischiorectal abscesses of prostatic origin. The number of ischiorectal infections in this series of cases is below the average, and is due to the fact that in many of the cases of prostatic abscess early operation was performed. I am convinced that nearly, if not all, ischiorectal abscesses which come under the observation of the genito-urinary surgeon are of prostatic origin, and that the reason so many ischiorectal abscesses relapse (which they certainly do) after treatment by simple incision and drainage is because the prostatic origin of the infection is overlooked. To cure these ischiorectal abscesses the origin and source of the infection must be removed.

Table V shows the proportion of cases in which there was marked urethral stricture.

TABLE V.

	Perineal Section and Drainage. Cases.	Prostatectomy. Cases.
With urethral stricture,	3	6

There were only three cases of stricture properly so called, but a very large number of the cases showed a congenitally narrow external urethral meatus necessitating meatotomy, and this fact should not be lost sight of as a contributing causative factor in the production of prostatic abscess. I believe that imperfect drainage of the urethra caused by this defect may play a not unimportant rôle in causing many of the complications incident to gonorrhea.

The operations, whether of perineal section and drainage, or of prostatectomy, were performed usually within twenty-four hours after the patient was admitted to the hospital. The most varied anatomical conditions as to size and extent of the lesions were found at operation.

Table VI shows the proportion of cases in which the suppuration was confined within the limits of the capsule, and those in which there was an extension of suppuration outside the capsule — periprostatic abscess.

TABLE VI.

	Perineal Section and Drainage. Cases.	Prostatectomy. Cases.
Pus confined with the prostatic capsule,	15	22
Pus had extended outside capsule,	8	14
Abscess had opened into rectum,	1	0

It will be noted that of the 59 cases, in 37 the pus was contained within the capsule, while in 22 cases there was periprostatic suppuration. In many cases one or more abscesses had ruptured into the urethra either before or at the time of operation, but in all of these cases other foci of suppuration which had not opened into the urethra were found in the portions of the prostate removed. A number of the patients had acute epididymitis at the time of admission, and several of these were admitted to the hospital with this diagnosis. The prostatic condition was found at the time of their examination.

SYMPTOMATOLOGY.

An analytical study of the symptoms and physical signs in this series of cases is of interest and leads to conclusions in some respects at variance with the usual descriptions of prostatic abscess. As I shall presently show, prostatic abscess presents great variety in its pathology and pathological anatomy. The lesions which are present are not always the same. The number of suppurating foci varies; the size of the abscesses vary from multiple miliary necrotic areas to collections of pus which occupy the greater part of one or the other of the lateral lobes. The abscesses may be situated near the urethra or in the center or near the periphery of the lobe.

The infective agent is not always the same and the toxic power of this agent and the resistance of the individual patient seems to be subject to great variations.

In view of these facts it is natural that the subjective symptoms and the degree of constitutional disturbance due to septic absorption should be subject to like variation.

We may for convenience consider these symptoms under the following heads:

1. Retention of urine.
2. Pain and frequent urination.
3. Purulent discharge.
4. Blood.
5. Constitutional symptom of sepsis.

Table VII.

	Perineal Section and Drainage. Cases.	Prostatectomy. Cases.
Abscess caused complete retention of urine in	13	18

1. *Retention of urine.* — Of the 59 cases of prostatic abscess, 31 cases, or more than 50%, had retention of urine. In the majority of these cases the retention was complete. In a few cases the patients were able to void a little urine at frequent intervals, but in all of the 31 cases the bladder was over-distended.

The retention was usually preceded for several days by frequent and painful attempts to urinate, the retention gradually increasing. In a number of cases there was a marked atony of the bladder, and when this was present the frequency of the desire to urinate lessened and the pain was diminished. In cases in which the retention of urine had continued for several days, and had been only partially relieved by catheter, there was involuntary dribbling of urine from vesical distention and overflow.

2. *Pain.* — Pain was a frequent but not invariable symptom. The painful sensations were of two kinds: (1) Pain associated with the act of urination; (2) pain not associated with urination.

In the cases of retention of urine there had been or was at the time of admission to the hospital pain associated with the act of urination. In many cases there had been or was pain and tenesmus at the time of urination. Pain and a sensation of weight in the perineum was a frequent symptom, and this was intensified in the cases associated with perineal abscess. Pain in the rectum was one of the more constant symptoms, and this was intensified upon defecation.

In many cases, especially in those with retention of urine, the rectal pain was intensified by the presence of hemorrhoids. There was marked pain and tenderness in the ischiorectal region in many cases, and this frequently was present when no evidence of ischiorectal infection could be discovered. I believe that if the cases in which this symptom was present had not been promptly relieved by operation there would have developed abscesses in the ischiorectal region as the result of infection from the prostate.

3. *Purulent discharge.* — In the cases in which an abscess had opened into the urethra there was usually a very profuse discharge of pus from the meatus. When this occurred in cases of retention of urine, the last part of the urine drawn by catheter resembled pure pus.

4. *Blood.* — In not a few cases there was noticed a discharge of blood from the urethra at the termination of the urinary act, but this was by no means a constant symptom.

The discharge of blood and pus not infrequently occurred during the preliminary rectal examination of patients caused by the mechanical rupture of an abscess into the urethra.

5. *Constitutional symptoms of sepsis.* — Chills and fever caused by septic absorption were very marked symptoms in a few cases, but in the majority of cases no history of chill could be obtained, and the febrile rise did not in most cases exceed 100° F. or 101° F., and frequently the temperature was normal. It was a striking fact that in many cases after the inital rise in the temperature there was a return to normal, and had it not been for the physical examination of the prostate, the presence of extensive suppurative processes might have been overlooked.

Speaking generally, I should say that the symptoms in many of the cases in this series were often less severe than might be expected from the descriptions usually given by most authors.

Physical signs. — The spontaneous opening of a prostatic abscess into the urethra is accompanied by an unusual flow of pus, the quantity depending upon the size of the abscess and the size of the opening. The pus appears at the meatus and also flows backwards into the bladder and then appears with the last urine passed at each urination. In these cases, when the drainage is imperfect, this symptom persists. When the drainage is efficient the quantity of pus rapidly diminishes, and this is associated with a diminution in the intensity of all the other symptoms.

Abscess of the prostate is often ruptured into the urethra during the rectal examination incident to diagnosis. In some cases slight pressure upon the prostate causes a flow of pus from the meatus. An abscess frequently is ruptured into the urethra during catheterism practised for the relief of the retention of urine.

The symptoms of pain and retention are sometimes relieved when the pus from the prostatic abscess extends outside the capsule.

An examination by rectal touch is necessary to a positive diagnosis of prostatic abscess, and this always should be combined with counter-pressure, first over the pubes and then upon the perineum. In the earlier stages of abscess it is impossible always to distinguish between the congestion and edema of acute prostatitis and that of abscess, but I believe that acute prostatitis without suppuration is rare when the symptoms have existed for more than a few days and when there is complete or partial retention of urine. In an abscess confined to one side of the prostate, the affected lobe is usually more swollen than the other. Fluctuation or a point of softening is present in many cases, but unless the abscess is large and the pus near the posterior surface of the gland, distinct fluctuation cannot always be detected by rectal touch. If one waits for fluctuation before operating, much valuable time will be lost and important structures destroyed. I have found extensive abscess of the prostate in cases in which by rectal touch I had failed to find fluctuation.

The outline of the prostate in cases of abscess is sometimes obscured by edema of the tissues in the anterior wall of the rectum. This is true especially in cases of periprostatic suppuration and in cases of prostatic abscess associated with suppuration about the membranous urethra.

In most cases of prostatic abscess I have found that the urine contains a larger percentage of albumen than can be accounted for by the pus. This symptom is one to which I attach considerable importance in doubtful cases. The albumen seems to be the result of an acute inflammatory edema, the serum escaping into the urethra.

Abscess of the prostate should be recognized and operation performed before the pus has extended beyond the capsule, and, when possible, before the abscess has opened into the urethra. I am convinced that I have shortened the duration of the disease by operating before the signs of fluctuation could be detected by rectal examination, and in all of these cases I never have failed to find one in which there was not suppuration.

An operation is indicated at the earliest possible moment unless the abscess has opened into the urethra, but in many cases in which this has occurred I believe an operation will hasten the recovery. An abscess which has opened into the urethra by a small opening requires operation quite as much as one which has not opened into the urethra. A periprostatic abscess always requires operation.

The removal of these diseased and suppurating prostates, comprised in this series of 36 prostatectomies and a large number of private cases not included in this series, has given me a very valuable collection of pathological material for the study of prostatic infections. This material could have been secured in no other way than by prostatectomy operations upon these patients. I believe that I state no more than the truth when I say that the value of these specimens in adding to our knowledge of the suppurative lesions of the prostate cannot be overestimated, and that the collection of these prostates, both in their number and the character of the lesions which they show, is unique.

The study of all of these specimens is not complete, and at the present time I can give only a general description of the results which we have obtained.

The method of study which has been employed has been:

1. To note the gross appearance of the lesions at the time of removal.

2. To submit the specimens to the examination of the Pathological Department of Cornell University. The histological examinations have been made by Dr. James Ewing, Professor of Pathology; Prof. T. W. Hastings, and by Dr. Mortimer Warren, of the Department of Clinical Pathology. Reports of these cases have been sent to me, and these have been compared with the clinical findings in each case. I desire to express my great obligation and thanks to these gentlemen for their painstaking work, and for the valuable criticisms which they have made as the work has progressed.

I may state in general that so far as our investigations go, the views which I expressed as to the pathology of prostatic abscess in 1904, and to which I have alluded in the opening part of this paper, have been confirmed as far as they went, but we have found in addition that in abscess of the prostate there is present every degree of the inflammatory process, and at my request Dr. Ewing has sent me a general description of these lesions made from a review of the cases which we have examined up to the present time, and of which I give the full text:

" The general impression one may draw from a review of these specimens is that one is dealing with the results of bacterial invasion through the ducts and extending throughout the stroma of the gland. Additional infection through blood vessels or lymphatics need not be excluded.

" 'It is possible to group the lesions in three classes as follows:

" '1. A purulent catarrhal process with exudate chiefly or wholly within the tubules.

" '2. An interstitial purulent process starting from the tubules, invading the surrounding stroma, destroying the tubules and forming miliary or larger abscesses. There were many grades of intensity of this inflammation, but the less severe grades were the more frequent, and mononuclear and eosinophile cells were commonly abundant, indicating a subacute rather than an acute process.

" '3. Chronic exudation and productive processes. These resulted in infiltration of the stroma, especially about the tubules, with mononuclear cells, the appearance of compact foci of lymphocytes, chronic edema, areas of softening composed of leucocytes, swollen degenerated epithelial cells and other fixed tissue elements, and occasionally of advanced hypertrophy and metaplasia of the tubule cells.

" 'While some areas showed in rather pure form each of these types of change, the lesions were usually combined, each case showing in different portions of the prostate all three stages of the process.'

"Regarding the possibility of spontaneous regression of the inflammatory process observed, I am unable to form a satisfactory opinion since the result must depend on the anatomical position of the tissue and the character of the infection. Clinical observation seems to me the only method of determining this question.

"Judging from the histology, while in some of the cases there appeared to be no irremediable damage to the prostate, as in the catarrhal cases, in many others there was extensive destruction of tissue, from which complete restitution under any conditions was impossible. When marked, metaplasia of the tubule cells seen in some cases suggests a relation of this chronic inflammatory process to carcinoma of the prostate."

It is as a result of my own clinical observation and of the pathological reports upon this series of cases that I justify the removal of these prostates as a method of treatment necessitated by the pathology of the disease and the ultimate clinical results in the patients operated upon.

THE OPERATION.

The membranous urethra is opened by a median perineal incision. The floor of the membranous urethra is cut from the bulb to the apex of the prostate. The prostatic urethra is dilated by passing the index finger through the wound and into the bladder. During this procedure the mucous membrane of the prostatic urethra, and in some instances the prostate itself, is split and an abscess is opened into the urethra. The wall of the prostatic urethra is then examined by touch. The opening of any abscess can be thus detected. The lateral lobes are then enucleated, separately, by breaking through the mucous membrane of the prostatic urethra with the finger. The "line of cleavage" is followed and the lobe is separated from the bladder wall. The middle isthmus of the prostate is broken at its junction with the lateral lobe. The lateral lobe is then free and is delivered through the perineal wound by means of a small lithotomy forceps.

The operation to an experienced hand is as easy as when the prostate is enlarged. But as in prostatectomy for enlarged prostate, the operation requires an accurate touch and a thorough and practical anatomical knowledge.

After the lateral lobes have been removed, the vesical orifice can be felt as a distinct ring which fits the end of the examining index finger. The hemorrhage is never very severe. To control this, I have adopted the following device: I introduce the finger into the perineal wound and hook the end of it over the edge of the lower lip of the vesical orifice. A pair of flat forceps with a lock in the handle is then passed underneath the finger and the lower lip of the vesical orifice seized and the forceps locked; the finger is then withdrawn and gentle traction is made upon the forceps. This draws the vesical orifice toward the perineum and compresses the prostatic plexus and causes almost complete cessation of the hemorrhage. The bladder is then emptied of any clots it may contain and irrigated. The bladder is drained by a metal perineal tube, 8 inches long and having upon the shaft a round diaphragm which, by means of a spring attachment, can be slid along the shaft of the tube, and will remain fixed where it is placed.

The tube I have employed is simply one of the straight Bigelow evacuating tubes, cut off to the proper length and fitted with the diaphragm. The tube is put in place without the diaphragm, and the wound is packed with strips of folded iodoform gauze by means of long forceps. It is important to put this packing in accurately, and during the packing gentle traction is made upon the forceps. In this way the packing makes pressure upon the edges of the vesical orifice and counter pressure is made by traction with the forceps. The hemorrhage is thus efficiently controlled. The forceps are then removed.

Long strips of folded gauze are then wrapped loosely about the tube as it emerges from the wound, so as to form a cushion; this should be thick enough to bring the surface of the cushion level with the tuberosities of the ischium. The diaphragm is then put upon the tube and pushed firmly down upon this perineal cushion of gauze.

A piece of rubber tubing 4 inches long is then put upon the end of the tube. The tube is held firmly in place and the dressings are applied and held in place by means of a three-tail perineal bandage which was devised by Dr. Herrick, a former house officer in my service at Bellevue Hospital. The outer tails of this bandage cross one another in the perineum, and the middle tail, which is split for the passage of the tube, is brought firmly over these and fastened in the middle line.

The patient is put to bed and simple syphon attachment made to the tube. With the dressing properly in place the patient may turn upon his side. There is practically no leakage along the tube. The dressing remains dry and the tube causes little discomfort.

The perineal tube is removed on the day following the operation. The packing is removed at the same time or on the day following, and the wound is then treated as a perineal section.

There was in most cases a rise in temperature of from 2 to 3° on the day following the operation, but this fever subsided promptly.

The bladder was washed out daily for three or four days through a catheter passed through the perineum. After this a silk coude catheter could be introduced into the bladder through the urethra.

In acute cases of gonorrhea, or in those in which the urethral discharge was profuse, we began the treatment of the anterior urethra at once by injections of a 10–20% solution of argyrol. These injections were given once or twice in twenty-four hours.

A sound, No. 24 F. or No. 26 F., was passed on the fifth or sixth day after operation and again at the end of the second week; this was done to insure the smooth healing of the prostatic urethra.

The perineal wound often does not close as rapidly as do the simple perineal sections. All urine is usually voided by urethra at the end of the second week. The perineum should be solidly closed in from four to five weeks. After the wound is closed, the deep urethra should be treated by instillations of 10% argyrol once or twice a week.

The following is a brief account of the postoperative complications in the cases treated by prostatectomy.

Table VIII.
Post-Operative Complications.

	Perineal Section and Drainage. Cases.	Prostatectomy Cases.
Epididymitis (unilateral),	8	12
Epididymitis (bilateral),	3	2
	11	14
Abscess of epididymis and suppurative vaginitis	0	3

Epididymitis. — Fourteen cases developed post-operative epididymitis; there did not seem to be any rule as to the time which this complication occurred. The shortest time was the fourth day; the longest was the forty-fifth day.

In 3 of these cases the epididymis suppurated and there was a concomitant suppurative vaginitis.

In one case the testes was so diseased as to require castration. In another, the globus minor was removed.

In all of these 3 cases, cultures of the pus showed a pure streptococcus infection.

In 2 of the 36 cases damage was done to the rectal wall at the time of operation.

In Case 2 of the series, the anterior wall of the rectum and the sphincter was torn; this was repaired at once and healed *per primam.*

The other case, operated upon by an assistant, showed at the end of the first week a small fistula (perineo-rectal) which was not healed, as patient declined operation.

In 2 cases, Nos. 10 and 32, operations were done for hemorrhoids which had developed during their illness, and this prolonged their stay in the hospital.

In 1 case, No. 11 (assistant's), there was a profuse discharge of pus from the perineal wound which delayed union forty-one days.

In 2 cases, Nos. 14 and 15, the seminal vesicle was found to be diseased. In one, No. 14, the vesicle was opened and drained. In the other, No. 15, both vesicles were removed.

The time spent in hospital by some of the patients might seem long, but this was necessary because I desired to keep these patients under observation, as many of them could not otherwise have been traced.

As to the results of this operation on the sexual function, this is a more important question than in cases of prostatectomy in older men with enlarged prostates. We have been able to examine most of our patients and we have found that in no case has there been a complaint in regard to the character of the erection or the ability to have sexual intercourse. The sensation is not impaired but a discharge of seminal fluid at the time of the orgasm is entirely absent.

I do not think that the necessity for prostatectomy in prostatic abscess can always be determined before opening the urethra through the perineum. The indications for an operation, whether perineal section and drainage or of prostatectomy, are very definite, but it is only by examination of the prostate by the finger passed into the prostatic urethra through a perineal opening that the necessity for prostatectomy can be positively known.

There is no absolute rule to guide the surgeon. The condition found at the time of operation must determine the extent of the operation, just as it does in all surgical procedures.

I have not abandoned altogether perineal section and drainage. I still consider this a good method, but the question is, whether prostatectomy is not a better method in the majority of cases.

I wish to express my thanks to Dr. Victor C. Thorne, assistant attending surgeon at Bellevue Hospital, for valuable assistance in collecting the clinical facts which form the basis of this paper.

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TOTAL EXTIRPATION OF THE LOWER PHARYNX FOR EPITHELIOMA, WITH PERMANENT ESOPHAGOSTOMA: REMARKS UPON THE SURGICAL TREATMENT OF CANCER

BY MAURICE H. RICHARDSON, M.D.,
Moseley Professor of Surgery, Harvard University.

The operative treatment of malignant disease seems at times so discouraging that it is no wonder that the surgeon's pessimism tends to increase as experience increases; no wonder, too, that he feels more and more strongly drawn toward conservatism and non-operative treatment, especially in cancer so situated as to forbid extensive and wide-margin dissections. Moreover, after reviewing the experience of many years, he cannot but feel somewhat skeptical of the brilliant results that he reads about, when in similar cases, with his own eyes, he sees only failures. When, for example, he sees reported a large percentage of cures after a certain method of extirpating cancer of the uterus, a locality where anatomically it is impossible to remove the disease by a broad margin, he is deeply impressed by the fact that under like conditions, after equally thorough operation, he himself gets but a small percentage of cures. Perhaps, indeed, he feels, as I am sometimes inclined to feel, that a permanent cure after hysterectomy for cancer of the cervix is about the strongest argument against the diagnosis of cancer. I do not, of course, mean quite this; but in the case of Mrs. B., Mrs. D. and Mrs. C., who lived years and years, and, for all I know, are living to-day, after vaginal hysterectomy for cancer, I could not but feel either that there was some mistake in the diagnosis, or that, as is surely the case, there is a great variation in malignancy, when the microscopic findings are identical. Be that as it may, how in the nature of things can it be that Dr. A.'s results make such a bad showing, compared with those of Dr. B., under apparently the same conditions? It seems incredible, even admitting that Dr. A.'s methods are bad and Dr. B.'s good. And furthermore, how can it be that Dr. C.'s results after thorough extirpation of the breast for cancer, an easy operation in an accessible area, do not compare at all favorably with Dr. D.'s results in extirpation of the uterus for cancer, a difficult operation in a comparatively inaccessible area? And yet breast cancer is discovered and operated upon early, whereas cancer of the uterus is almost always recognized late.

What is a man to say or believe when he compares his own 30% recoveries after operation for breast cancer with another man's 50% or 60% recoveries after hysterectomy for uterine cancer? And yet I saw published not long ago such an extraordinary record of successes.

Common sense, in response to so natural a query, says that somewhere there must be error; that two such experiences are utterly incompatible; that cancer of the uterus, even in the most skillful hands, cannot, from the nature of things, present as high a percentage of recoveries as cancer of the breast, even in less skillful hands.

I admit the feeling of discouragement which now and then comes over me when I see recurrences after the broadest possible dissections of breast cancer. I do not mean recurrences in the unfavorable cases, in which at the time of operation there are infiltrations of skin and axilla; but recurrences after the most radical removal of the small, movable tumor, with thorough dissection of the axillary nodes, which, if infected at all, are not perceptibly abnormal. Neither do I mean local recurrences, which suggest operations lacking in thoroughness. I mean, rather, the metastases of lung, brain and spinal cord, infections so distant in time and in anatomical situation that all connection between the original disease and its later manifestations is lost.

Take, for instance, the case of Mrs. M. (Vol. lxiii, p. 113), in which there was not a sign of recurrence in or about the scar. The patient now, two years after operation for breast cancer, suffers intensely with a right sciatica, owing probably to an invasion of the spinal cord.

Take the case of Mrs. B. (vol. xxxii, p. 104) who was operated upon in 1894 for cancer of the uterus. She is now, fourteen years after the original operation, suffering from an undoubted recurrence.

But questions of recurrence, its causes and course in cases like these, I do not wish here to discuss. I mention them to show why I have been at times filled with doubt as to the permanency of my operative cures and why, even in the most favorable cases, it is difficult to avoid a certain amount of discouragement in advising the surgical treatment of malignant neoplasms.

Is there, in a large experience with malignant disease, something which is unavoidably disheartening, and does that experience lead invariably toward pessimism?

There surely is this tendency and it is a perfectly natural one, because the failures, even under the best conditions, vastly outweigh the successes. It is much more difficult in our profession to forget unfortunate occurrences than to remember fortunate ones. Furthermore, those who have been fully and permanently restored to health forget us. They are not eternally dinning it in our ears with tears of gratitude that we have saved their lives and that they can never, never in this world repay us. A very few do thus remember us, but the recurrent cancer brings the patient back to us in grief, fear and, too often, in dissatisfaction, and we endure disappointment, chagrin and sometimes remorse. Moreover, we are compelled to suffer these ineffaceable emotions where, as I say, the pleasing ones are conspicuous by their absence. Could we, unaffected by the sorrows of failure, be influenced only by the joy of permanent health, the direct result of our best efforts, our treatment of malignant disease would tend strongly toward optimism. As it is, experience in cancer, for the reasons given, tends toward pessimism and we must needs resist this natural tendency because it leads too far. From the very fact that malignant disease is so bad, our present success is all the more wonderful and encouraging.

Almost as I write these words a patient comes to consult me for uterine hemorrhage fourteen years after extirpation of the left breast for medullary cancer. I had forgotten her entirely, her case had escaped the search in my records. She had not forgotten me, however, for she came to consult me as soon as she discovered the uterine hemorrhage, the first symptoms she had had since the operation in 1894. Cancer of the breast without symptoms of recurrence at the end of three years may be cured, or it may not; usually it is not. I do not look upon this arbitrary period of immunity as in the least indicative of permanent cure; it is only a hopeful sign, but when, at the end of fourteen years, a patient shows every evidence of splendid health, I admit that my hope in wide extirpation of cancer is greatly stimulated. In malignant disease so situated that wide-margin extirpation is impossible, I feel, as an anatomist as well as a surgeon, great discouragement. The prognosis is so grave that it seems hardly worth while to attempt such an operation as resection of the esophagus, even when that operation is quite feasible. A case like the one here reported, in which the pharynx was extensively involved in undoubted cancer, but in which complete extirpation was proved possible and efficient, lends hope to every patient with cancer of the deep neck. And in our combat with malignant disease we must undertake operation with hope if we undertake it at all; the half-hearted, what's-the-use dissection is worse than none. We must in cancer, more than in any other disease, call upon our favorable experiences and be influenced by them rather than by our unfavorable ones. And any surgeon who has done much operating knows well that some of his best results have followed operations undertaken with little hope. The surgeon should fight against the gloom which his experience in operations for cancer, as I say, naturally stimulates. Let him remember the good, magnify it if he can, while he minimizes the bad. Thus only will he gain a fair conception of the truth of the whole question.

Experience in general surgery surely does not lead toward pessimism, for if it did the surgeon would feel the same depression in undertaking operations for all conditions. On the contrary, with increasing observations in operations for gallstones and appendicitis, his enthusiasm increases. Indeed, in surgery of all kinds, for all lesions except the malignant and for all conditions except that of neurasthenia, the results, both early and late, are wonderfully good and, to the extreme, encouraging. Unfortunately, after many years of surgery in cancer, there is only too good reason for this feeling of discouragement. Now, as my own familiarity with malignant disease becomes more intimate, I cannot but fall under its depressing influence. I easily, therefore, appreciate the attitude of Dr. Hodges, late in his brilliant career, when he gave it as his opinion that surgery was useless in most cases of malignant disease. (Address before The Massachusetts Medical Society in June, 1886.) I was determined, nevertheless, not to accept so depressing a view of this matter and I ascertained as far as possible the end-results in the patients operated upon at the Massachusetts General Hospital between 1878 and 1888. These researches showed, even at that time, the brilliant results of surgical operation in many forms of malignant disease.

Since that time surgery has, of course, added enormously to our knowledge and has wonderfully bettered our results, and yet, in many cases, the discouragement is quite as general as it seemed to Dr. Hodges in 1886. But in thus yielding to the accumulating impression of many years, are we not unwarrantably disheartened? Are there not many permanent cures which have been overlooked or forgotten and which an exhaustive search would reveal? I am sure that we hear more from the unsuccessful than from the successful cases and that unless we make the most vigorous effort we shall overlook many a brilliant and permanent recovery which has been forgotten in the apparently overwhelming majority of failures.

Many years ago I operated on a patient with a cauliflower growth of the cervix so extensive as almost to forbid operation. Dr. Gay, who sent her to me, has recently reported that she is living and well, without a sign of recurrence. I had taken it for granted that the disease had long ago proved fatal. Are there not many such cases? I am sure there is many a brilliant recovery after the most discouraging outlook. The trouble is, that we do not see or hear from our successful operations, because they are successful. I should have said, for instance, that cancer of the tongue was invariably fatal by early recurrence and that I myself had not had a single success, but for the testimony of the men who have been looking up the Massachusetts General Hospital cases. So it is in cancer of the rectum[1] and of other regions of the body; we seldom hear from the favorable cases, but, as bad news travels quickly, we are sure to hear from patients who are doing ill. In the total number of patients from whom we have never heard, is it not safe to assume that some, at least, are without unfavorable symptoms? In searching for evidence, is it not, therefore, unjust to facts to assume that those patients who cannot be traced are invariably dead or that in their cases the disease has reappeared? Are not many patients living and well who have been lost sight of?

In the early '80's I removed from a woman of middle age by dissection through the neck a sarcoma of the tonsil. Some years later I wrote to friends of this patient in Pictou, Nova Scotia, asking for date and particulars of death. The patient herself replied, but with indignation that I should even have suggested her death. She said that she had never been better than she was at that moment.

That we have had good reason for discouragement in the treatment of malignant disease is only too true, but is it not also true that in the future we have good reason for encouragement? One of the elements of hope lies in cases like the one reported in this paper, cases that were undertaken with much reluctance and with little hope, but which have proved brilliantly and permanently successful. Such cases cannot but encourage us to renewed efforts at the expense of extensive dissections, permanent deformities and serious disabilities, even in regions thus far forbidding.

Mrs. D. P. J., aged forty-seven, was referred to me on Nov. 5, 1902, by Dr. Farlow. Except for rheumatism in the legs she had always been well until four months before this time. In July, 1902, she began to have spasms in the throat. The spasms increased in severity until four weeks before her first visit to me, when she became unable to swallow solid food.

Dr. Farlow had found nothing in the nose or in the fauces. The vocal cords were unaffected; there was nothing abnormal in the larynx. In the pharynx there was a large, sloughing mass, a fragment from which was pronounced by Dr. Whitney to be epithelioma.

I found the pharynx to be filled by a fungous mass which prevented the swallowing of anything but liquids. The mass could be touched with the fingers, but could not be seen without a mirror. It was attached by so broad a base that a large part of the posterior and lateral walls of the lower pharynx were involved; so large a part, in fact, that extirpation was impossible without complete destruction of the power of swallowing. Indeed, it was a question how much the passage of air through the pharynx and into the larynx would be impeded.

The growth is described in my records as a sloughing tumor in the posterior pharyngeal wall.

The outlook for permanent cure in this case seemed about as discouraging as it could, judging by the usual results of operation upon cancer in inaccessible regions or in regions which do not permit removal by a wide margin of safety. I had had, however, encouraging success in one or two pharyngeal and tonsillar tumors. Moreover, the complete filling of the pharynx made some operation immediately imperative. Resection of the pharynx or esophagus presents no great technical difficulties. In any event, if worst came to worst, breathing could be provided for by permanent tracheal tubes and nourishment by gastrostomy. We therefore decided to make an attempt at complete extirpation, and, failing in this, to give at least temporary relief.

The operation was performed at the Eliot Hospital on Nov. 15, 1902. Dr. D. F. Jones, at that time my first assistant, described the operation as follows:

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[1] I had hardly written this when I was informed by Dr. Clement, in Haverhill, that a patient of his, upon whom I operated some years ago for cancer of the rectum, is now perfectly well.

"An incision of six inches was made from the angle of the jaw downward along the anterior border of the sterno-mastoid muscle. At this time the patient began to breathe so badly that a tube was put into the trachea. The dissection was then carried down to the pharyngeal wall. This was difficult to get at because the enlarged thyroid gland extended almost entirely around the esophagus and up onto the pharyngeal wall. The pharynx was then opened. The tumor occupied the entire posterior wall and extended well around onto both sides. It also extended down into the upper part of the esophagus. The whole tumor was cut away, with a margin of from ¼ to ½ inch. This left but a very narrow strip of mucous membrane on the left side of the pharynx, about ¼ inch wide. Such a large area of mucous membrane was removed that there was nothing to be done but to bring the edge of the esophagus out and suture it into the wound. The bleeding points were tied with catgut and the denuded area of the pharyngeal wall was packed with gauze. Before the esophagus was sutured to the skin a chain of enlarged and hardened glands running into the mediastinum were dissected out. The lower and upper parts of the wound were closed with silkworm gut sutures."

The patient was fed very satisfactorily through a rubber tube left in the esophagus. Convalescence was uninterrupted and complete. The patient quickly became accustomed to the esophageal feeding, by which she was easily and adequately nourished and her strength fully maintained. Life was full of enjoyment to her and was well worth living.

Technically the operation was to me very pleasing. Exposure of the pharynx and esophagus is always an interesting anatomical procedure. Serious interference with respiration under complete anesthesia may be encountered in the beginning, as in this case, but the surgeon may always be sure of his patient's breathing the moment the pharynx is opened and the larynx free.

Removal of the growth was possible because it had not infiltrated or passed beyond the pharyngeal tissues. The chain of lymph nodes extending into the mediastinum excited most apprehension and made dark the outlook for permanent cure. However, as Dr. Whitney shows, these nodes, though enlarged, were not infected with the disease.

Dr. Whitney's report was as follows:

> The specimen from the pharynx of Mrs. D. P. J., Eliot Hospital, Nov. 15 (C. 211–6), consisted of a fungous papillary new growth about 4 cm. in diameter and ½ cm. in thickness. The surface was composed of coarse, papillary projections, the base solid in character and quite sharply marked from the subjacent tissue.
>
> With the above were two small pieces which showed a slight papillary thickening on the surface.
>
> *Microscopic examination* showed solid masses of large flat epithelial cells which covered papillary projections on the surface, and a round-celled tissue which had infiltrated the muscular fibers at the base. In places these cells were in horny, imbricated whorls.
>
> *Microscopic examination* of the two small patches showed a commencing growth of a similar character.
>
> A lymph node which was also removed did not show any evidence of the new growth.
>
> *Diagnosis.* — Papillary epithelioma.
>
> Yours very truly,
>
> (Signed) W. F. Whitney.

This patient went to Brooklyn to live. She was seen in 1903 by Dr. Dennis, of New York, who found no return of the disease.

On Dec. 29, 1906, she was examined by Dr. Brothers, of New York, who reports: "There is no evidence of recurrence (I assume that the original condition was one of malignancy) and, in spite of the fact that she is nourished through the artificial opening in the neck by means of a tube and liquid food, she presents a well-nourished appearance. Her only annoyance just now is a troublesome cough, which seems to have no connection with her former trouble."

Another letter received from Dr. Brothers this fall is as follows:

> 112 East 61st St., New York,
> Sept. 21, 1908.
>
> *My dear Dr. Richardson,* — I have seen Mrs. J. a number of times since my communication to you, and certainly must congratulate you on a good piece of work. Although she suffers from bronchitis and a tendency to asthma, her general nourishment is excellent. She attends to her household affairs and acts as cashier for one of her husband's ventures at Coney Island. She is a large-built, heavy woman, who surprises me by apparently not losing in flesh or weight in spite of (1) the diagnosis of malignancy made at the time of your operation and of (2) being exclusively fed on liquid food through the esophageal tube.
>
> . . . .
>
> Very sincerely,
>
> A. Brothers.

Brought daily into intimate contact with malignant disease, the surgeon may become so accustomed to its manifestations that he is no longer impressed by what he sees. He proceeds along the beaten track, influenced too much, perhaps, by early ideas and too little by late ones. He assumes that there is no use in this or in that procedure, he insists that this case is inoperable, because that one proved inoperable. He declares, when he has been drawn into a hopeless and fatal operative tangle, that he will never permit himself to be drawn into another. He becomes blind to conspicuous things, he fails to observe the difference between the well-defined, localized and movable tumor and the infiltrating tumor immovably blended with surrounding tissues. Furthermore, he is too inclined to make major deductions from minor premises, to judge the results of ten years from one or two unfavorable cases. As I write, information as to my results in cancer of the breast, in cases operated upon within the last twenty years, is coming in, with descriptions of permanent cures that are very encouraging. Judged by the recurrences and deaths I had already recorded, surgery had begun to seem as inefficacious in cancer of the breast as in cancer of the rectum. But here come reports of cases of ten or fifteen years' standing in which the patients are in perfect health and comfort. So it will, I think, prove in cancer everywhere if we undertake operative treatment with hope, but so it will never be if we undertake it with a half heart and with the full expectation of failure.

I have observed, as all operators must have observed, the efficacy of certain anatomical barriers to the spread of cancer. The most unyielding obstacle I have ever demonstrated is the dura mater to the internal progress of epithelioma. I have seen the dura mater make an efficient resistance to cancer which had successively destroyed the cheek, the eye, the scalp and the bone, and which had fastened itself, by a palm's breadth, upon the dura's outer layer. Removal of the dura showed an infiltrated outer layer and an internal (arachnoid) surface apparently unaffected. In anatomical tubes like the pylorus, the intestine (small and large) and the rectum, the disease seems for a long time effectively restrained from spreading into contiguous tissues, just as it is in the dura mater. The rectum, for example, is infiltrated to the prostate and seminal vesicles and no farther, though the disease has spread laterally and longitudinally. The pylorus is extensively infiltrated, but for a long time not beyond the peritoneum.

In metastasis formation the clinical evidence is sometimes inexplicable. Cancer of the uterus is almost never associated with metastases in the liver. Rarely is an infected lymph node found in the pelvis. In some cases of mammary cancer lymph nodes in the axilla are early and extensively diseased; in others, slightly and late. Sometimes there is very little to be felt in the axilla and much in the breast; at other times, much in the axilla and little in the breast.

It is not well to assume, therefore, that cancer is hopeless, even in such a place as the pharynx or the esophagus, so long as cases like the one here reported are met with. Provided that the disease permits removal without inevitable death and without sufferings which are worse than the disease, our present method of treatment by the broadest possible excision should be followed, in spite of reverses and discouragements. Much as is to be hoped from the treatment by serums, toxins and ferments, little is, I fear, to be expected with confidence. Much as I should welcome an era when cancer would no longer be regarded as a surgical disease, I feel that the time has not yet come when we can relax in the least our vigilance, nor has the time come when we can trust cancer in its operable stages to any method of attempted cure other than surgical excision. I have seen so many operable and favorable cases drift, under x-ray, toxins and other loudly-heralded cures, into inoperability and death, that I am sure we must confine new methods, like the use of trypsin and amylopsin, to the inoperable cases. For the few authentic x-ray cures of cancer in its simple and superficial forms, like epitheliomata of the face, I have seen hundreds of patients who, under the dread of the knife and the encouragement of the x-ray, have drifted into hopeless inoperability.

The case herewith reported, which I had well-nigh forgotten until the receipt of Dr. Brothers' letter, is one of those which cannot but encourage the surgeon to renewed efforts along present lines of treating the carcinomata in apparently hopeless situations.

BURSITIS SUBACROMIALIS, OR PERIARTHRITIS OF THE SHOULDER-JOINT. (SUBDELTOID BURSITIS.)

BY ERNEST AMORY CODMAN, M.D., BOSTON.

(Continued from No. 18, p. 582.)

PROGNOSIS.

Before considering treatment it is well to consider prognosis. In some diseases it is almost as well to know the prognosis as to know the appropriate treatment. This is particularly true in the lesions of the subacromial bursa. Many cases consult a physician because they are anxious to know what their trouble is, and having had the condition explained to them, and having been told that in course of time improvement is almost sure to come without treatment, prefer to wait for relief rather than to seek it.

In such cases the fear that some unknown trouble is beginning has certainly much to do with the suffering experienced. Improvement frequently begins from the date that the diagnosis is made, especially as it is a fact that these symptoms are more noticed in high-strung, nervous, apprehensive individuals.

The prognosis in Type I, the acute cases, is very favorable if the course of the lesion is not interfered with by misdirected treatment. In my experience these cases seldom continue more than a few weeks if a judicious course between too vigorous exercise and too prolonged fixation is followed. Prolonged fixation, either voluntary by the patient in order to avoid pain, or involuntary by apparatus designed by the physician to give support and rest, is the usual cause of delayed recovery. Of course, in cases where the cause is particularly acute, such as those complicating fractures or gonococcus infections, the spasm itself maintains fixation so long that adhesions and atrophy of the short rotators follow.

The prognosis in Type II, the adherent cases, is the most serious, but it is fairly safe to say that even without treatment the disability seldom lasts over two years. Most cases that I have seen have come under observation between six months and one year from the date of onset. I have never yet seen one where the patient complained of disability after three years, but in a few instances, in making examinations for other lesions, I have noticed shoulders which showed restricted motion and some muscular atrophy due to a previous lesion which probably was of this nature.

From my experience I believe that even severe adherent cases (provided no secondary contractures have occurred in the muscles of the forearm) will recover of their own accord without treatment in from one to two years, and in favorable cases in from six months to a year.

The prognosis of cases of infective or insidious origin is not so good as in traumatic cases.

The prognosis in Type III, chronic cases, in which the mobility is not affected except at certain angles in the arc of motion, is, on the whole, good. The symptoms may abate or disappear at intervals and return again after several months.

Some cases have the same elusive quality that is exhibited by cases of fringes in the knee-joint. At times there is no trouble, and again a synovitis of subacute character starts up and the symptoms reappear. Occasionally such exacerbations lead to an acute condition and result in adhesions so that the condition passes through all three types. (Case XVI.) Cases of Type III occasionally last for many years with intervals of quiescence.

As I have said above, it is perhaps better not to consider Type IV, the severe traumatic cases, as a separate type. These cases, according to their severity, fall into the other types. If the supraspinatus is barely nicked it will be a case of Type I; if the arm is babied or abused it may become Type II, or if the immediate symptoms subside without the formation of adhesions there may simply be a notch left on the floor of the bursa where the tear occurred. This notch may spoil the smoothness of motion and cause the symptoms of Type III.

The most severe cases tend to recover as promptly as do other serous sheaths about fractured bones, although where tight dressings have been applied the recovery may be very slow. Their prognosis is the prognosis of the accompanying fracture. The bursa may be badly torn and heal easily, just as it does when incised. Most fractures of the tuberosity and neck of the humerus pass beneath it anatomically.

PART II. TREATMENT.

Treatment of Type I. — In treating the acute cases we must consider two main indications — the patient's comfort and the avoidance of adhesions.

For comfort, we have the usual drugs, e. g., morphine, phenacetine, bromides, asperin, etc., and physiological rest. Rest is best obtained by keeping the arm in an abducted position. As Dr. Monks has suggested, the patient may be seated with a table at his side and the abducted arm laid on a pillow on the table. This position relaxes the short rotaters and deltoid and allows the tender point on the base of the bursa to avoid contact with the tip of the acromion. The physician, in arranging the patient in this position, should not be content with partial comfort, but should adjust the pillow until perfect relaxation and comfort is achieved. The patient will soon learn to accomplish this himself.

Dr. C. P. Putnam has suggested to me a position for these patients to assume at night. The arm is supported on a pillow placed with its long axis at right angles with the patient's body as he lies on his back. By this position relaxation in abduction is also obtained. When the patient has to be about, a sling may be used with the utmost caution. He should be instructed to occasionally take his arm out of the sling and let it swing by his side, or, when possible, to rest it on a table or the arm of his chair. A Velpeau bandage should never be used for more than a day or two.

I regard counterirritants with distrust, especially when applied directly over the bursa. I believe that massage is of considerable value if applied to the adjacent muscles and subcutaneous tissue, but not to the region of the bursa itself.

The following two cases illustrate well this type, when the symptoms are mild and when the treatment does not interfere with recovery. In both cases I believe the primary cause to have been a slight rupture of the fibers of the supraspinatus at the point of the insertion, beneath the base of the bursa. Possibly the sudden action of the deltoid without the harmonious and simultaneous action of the supraspinatus allowed the tuberosity to get a fulcrum on the acromion and thus bruised or abraded the base of of the bursa.

Were it necessary I could give many more instances of similar cases, but it seems a useless repetition. In most, as in these cases, the injury is due more to an indirect violence from the sudden exertion of the muscles than from a direct blow on the point of the shoulder. In some cases, however, it appears that a direct blow may bruise the bursa or crush the tendon against the globular head of the bone.

Many cases which at first appear as simple as these may later become more severe types if the treatment is misdirected. For instance, if long fixation is employed, adhesions may supervene, or if the patient is obliged by his occupation to overuse his arm in abduction, a chronic point of irritation may develop at the point of the lesion and cause friction during motion.

Case I. Mr. P. K. Age, nineteen. Electrician. Massachusetts General Hospital, June 26, 1906.

Four days ago was holding strap in the elevated train. A sudden turn caused a twist in his right shoulder, producing great pain. On the first night after injury he got little sleep. He now complains of pain about the insertion of the deltoid and shoulder and that he cannot raise the arm

On examination there is no external sign of injury or of paralysis. All the muscles, including the deltoid, can be felt to contract on voluntary effort, but the patient cannot or will not raise the arm to a vertical position. When the arm is abducted for him he can hold it, however. There is a tender point on the tuberosity which disappears beneath the acromion in abduction.

Under rest, combined with occasional gentle exercises on the Zander apparatus, this patient recovered completely in two weeks.

Case II. Mr. A. C. Age, twenty. Painter. June 4, 1906. Massachusetts General Hospital.

On June 2 was riding a bicycle and ran into a wagon. Suddenly raised arm to save himself. When seen on June 4 complained that he could not raise arm. Passive motion, however, showed arc of motion normal and, when sufficiently urged, patient could abduct the arm himself, although with pain. During the motion, however, there was a decided jump when the tuberosity disappeared under the acromion. There was acute tenderness at a point on the greater tuberosity just external to the bicipital groove in adduction. In abduction this point disappeared beneath the acromion.

A sling and circular was applied to prevent use of the shoulder and when in a few days the soreness had abated, gentle exercises on the Zander apparatus were prescribed. In two weeks the patient was discharged well.

(To be continued.)

THE SERUM TREATMENT OF EPIDEMIC CEREBROSPINAL MENINGITIS, WITH A REPORT OF TWENTY-TWO CASES.

BY FRANK TAYLOR FULTON, M.D.,

Pathologist to the Rhode Island Hospital, Providence.

(Concluded from No. 18, p. 575.)

CONCLUSIONS.

Case XIV. Virginia De S. Age, nine.

Admitted to Dr. Kingman's service May 10, 1908.

The onset was on May 7 with headache and vomiting. The symptoms were worse on May 8 and 9, and stiffness of the neck was noticed on May 10, the day of admission.

On admission the eyes were normal. Neck was very stiff, and head retracted. No herpes nor eruption. Patellar reflexes diminished. Kernig's sign marked. No ankle clonus nor Babinski. Patient was given four doses of antiserum of 30 ccm. each on successive days. There was a temporary fall of temperature from 103° F. to normal with the first dose of serum. There was a subsequent rise for about four days, after which it was normal. There was some delirium just after admission but the patient was rational after the second dose of antiserum. By the fourth day there was marked improvement. The retraction of the head and stiffness were already disappearing. Patient was allowed to sit up with a headrest in two weeks after admission. She remained in the hospital one month and was discharged completely cured.

Cerebrospinal fluid. — The organism failed to grow in this case. A few intracellular diplococci were observed in smear from first lumbar puncture, but none subsequently. At the last puncture the fluid was practically clear.

Case XV. Leo G. Manville, R. I. Age, sixteen.

Patient came first under the care of Dr. Marianda. He was then seen by Dr. Hague and later by Dr. T. J. Smith, of Central Falls. The present illness began about May 13, with frontal and occipital headache and pain in the arms and legs. Temperature, 104° F. On May 22 he was seen first by Dr. Smith, at which time there was marked retraction of the head and marked Kernig's sign. On that day a lumbar puncture was made and he was given 15 ccm. of antiserum. He was given two subsequent doses of 30 ccm. each, on May 24 and 25. The family after that decided not to have the treatment continued. The patient died on June 14 after an illness of thirty-three days. There was some improvement for a while after he received the serum, but towards the end of the illness he again had marked retraction of the head with exacerbation of all his symptoms.

Cerebrospinal fluid. — No culture was made from the first fluid, but intracellular diplococci were found in the smear. Fluid on May 24 and 25 showed no bacteria and no growth occurred in culture. The fluid on the 25th was a trifle less cloudy than on the previous day.

The fact that the patient lived for three weeks after treatment was abandoned suggests that if the treatment had been continued he would have had a good chance for recovery.

Case XVI. Mary H. Pawtucket, R. I. Age, two years, two months.

Patient was first seen with Dr. Frank A. McKenna on May 30. She had measles about three weeks previous to this date. According to the family the measles ran an ordinary course. The onset of the present illness was on May 26. The child vomited and there was some apparent difficulty with the respiration. Condition was considered pneumonia. On the 27th the child became dull and during the following three days was practically unconscious. She was not seen by Dr. McKenna until May 30, at which time he made the diagnosis of meningitis. There was very slight stiffness of the neck. No definite retraction of the head. Slight internal strabismus but the pupils were equal and rather small. Kernig's sign was not very definite. No eruption. A few herpes on the lips. Temperature, 103° F. Pulse, 130. About 22 ccm. of cloudy cerebrospinal fluid was removed and 25 ccm. antiserum injected. On standing there settled out of this fluid about 4 mm. of fibrino-purulent material which showed many pus cells and a few intracellular Gram negative diplococci. These grew on blood serum. The organism was the diplococcus intracellularis meningitidis. The child remained in the comatose condition in which it was first seen and died twenty-three hours later.

Case XVII. Rosa S. Age, fourteen.

Admitted to Dr. Kingman's service June 8, 1908.

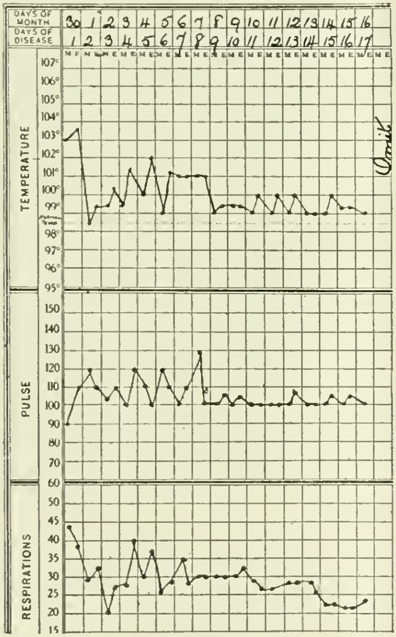
Three days before admission patient did not feel like going to work and remained in bed. She later vomited and had a severe headache and pain in the neck and back. On June 7 and 8 she was at times irrational.

On admission there was stiffness of the neck and some retraction of the head. Pupils normal. No strabismus. Some photophobia. No herpes nor eruption. Marked Kernig's sign on both sides. Patellar reflex diminished on right, absent on left. Ankle clonus absent. No Babinski. Patient mentally dull and stupid but no delirium. Temperature, 102.5° F. There was a temporary fall of temperature after the injection of the serum and the following day the patient seemed distinctly better. She received four doses of antiserum on successive days. The convalescence was rapid and uneventful. Temperature was practically normal five days after admission, although there were occasional rises to 99° F. or 99.5° F. She was discharged completely cured twenty-two days after admission.

Cerebrospinal fluid. — On June 8 diplococci both intra and extracellular were found in moderate numbers, and an abundant growth appeared on blood serum. The organism was again observed in smear on June 9 both intra and extracellular, and on June 10 a few extracellular. It failed to grow after the first puncture. The fluid at the last puncture was faintly turbid, with practically no sediment.

Case XVIII. Arthur L. V. Manville, R. I. Age, four years, two months.

Patient was first seen on June 30, 1908, in consultation with Drs. Hague and Clarke, twenty hours after the onset of the disease. The child wakened at midnight and vomited. He was quite sick, restless and peevish until about one o'clock the following afternoon, when he grew rather suddenly worse. He became stupid, but after a stupid period lasting five or ten minutes he would suddenly waken with a wild cry. He would soon fall asleep again. At eight o'clock that evening when he received the first dose he was desperately ill. He received in all six doses of antiserum, the first five on successive days and the sixth two days after the fifth. The temperature dropped from 103.5° F. about the time of the first injection to normal seven hours later. Respiration dropped from 45 to 28. There was a rise in the pulse from 90 to 120. Patient's general condition the following day was decidedly better. There was, however, a gradual rise in the subsequent temperature until it reached 102° F. four days after the first injection. There was then a gradual fall reaching 99° F. on July 8, eight days after the first injection. After that it varied from 99° F. to 100° F. for a week. The general symptoms improved gradually from the time of the first injection. The improvement was not so rapid as in some cases and consequently the injections of serum were continued until the spinal fluid was almost perfectly clear. As the condition of the child improved it became evident that his hearing was impaired, and later examination made it quite evident that the child was perfectly deaf. He has gone on to complete recovery, excepting for the deafness, which at present seems absolute.



Case XVIII.

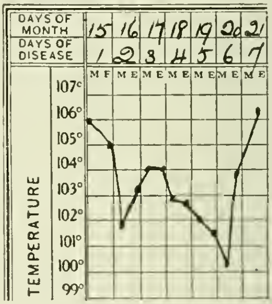
Cerebrospinal fluid. — On June 30 the fluid was very turbid and showed many diplococci, most of them intracellular and a very few extracellular. An abundant growth appeared on blood serum. No organisms were seen and no growth occurred from the fluid at any subsequent puncture. The fluid was almost entirely clear on July 6, the day of the last puncture.

Case XIX. Joseph P. Age, seventeen.

Admitted to Dr. Kingman's service July 15, 1908.

Patient was taken ill about two days before admission. While at work he fell from a ladder, a distance of but a few feet. After falling he complained of a severe headache, but was able to finish his day's work. During that night he vomited. He was ill in bed the following day, and the second day came into the hospital.

Patient was a large, well-developed and well-nourished boy. He on admission was dull and apathetic. It was later learned that he had always been somewhat deaf and had been educated at the Institute for the Deaf. His answers were vague and irrational. Pupils dilated. No strabismus. Some retraction of the head. Marked stiffness of the neck. Kernig's sign present on both sides. Patellar reflexes absent. Plantar reflexes preserved. No rash. The patient was immediately given 30 ccm. of antiserum. His temperature fell from 105.8° F., which it was on admission, to 101.2° F. within twelve hours. Patient the following day was quite rational. The stupor had disappeared and he answered questions intelligently. Said that his headache was better than the day before, but still complained of stiffness of the neck and pain on motion, and some internal strabismus had developed. Patient received five injections of antiserum, four on successive days and the fifth two days after the fourth. The first interval was about thirty hours. After the second injection he became worse, was very delirious and talked constantly. Retraction of head more marked. Temperature rose and on the second day was again 104° F. Patient lost control of his sphincters on July 19. The delirium continued and the temperature remained high. On the 20th it was evident that his general condition was failing. During the 21st he became gradually worse and his temperature reached 106.2° F. He was in low delirium and soon became comatose. He failed gradually and died about nine o'clock July 2, six days after admission.



Case XIX.

Cerebrospinal fluid. — A few intracellular diplococci were observed which grew abundantly on blood serum. These were from the first puncture. July 16 culture and smear were negative. On July 17 smear negative, but culture showed a growth. On July 18 smear was negative, growth more abundant. On the 20th a few extracellular diplococci were seen and growth was abundant.

This particular case in our series was entirely unique. There was a marked fall in the temperature and alleviation of the general symptoms after the first dose of serum, but at the end of the second day the symptoms became more severe than ever. The organisms at first disappeared from the cerebrospinal fluid, but later reappeared and the injections seemed to have no effect either on the cerebrospinal fluid or on the patient's general condition.

It is of interest to compare this case with Case XVIII. The onset, the fall of temperature after the first dose, the subsequent rise in temperature, were quite similar. In the child, however, there was a slow but steady improvement. In this case improvement lasted only for about a day, when the symptoms and signs again increased and the case proceeded to a fatal issue.

Table of Results of Use of Serum in Cerebrospinal Meningitis.

Number.	Age.	Day of Disease.	Dates of Injections.	Total Amount Given in ccm.	Total Amount Cerebrospinal Fluid Withdrawn in ccm.	Maximum Single Dose.	Number of Doses.	Type of Case.	Immediate Effect.	Duration.	Complications.	Result.
1	8	7	Jan. 8, 9, 11; Feb. 2, 3, 5, 6, 7, 18, 19, 21, 22, 23, 24, 26, 28; March 1, 2, 4, 6, 8, 13	660	770	30	22	Severe relapsing	Gradual improvement	4 mo.	None	Cured
2	9	5	Jan. 18, 19, 21, 22	120	140	30	4	Common	Temporary fall of temperature	13 d.	None	Cured
3	51	6	Jan. 26	30	30	30	1	Severe	None	14 hr.		Death in 12 hr.
4	14	2	Feb. 14, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 28; March 2	390	515	30	13	Very severe. Many convulsions	None	31 d.	Otitis media	Cured
5	10	4	Feb. 20, 21, 22, 24, 27	150	175	30	5	Common	None	23 d.	Otitis media. Deafness	Recovery; totally deaf
6	15	160	March 3, 6, 11	90	70	30	3	Chronic	None	6 mo.		Death
7	13	3	March 9, 10, 11	90	90	30	3	Mild	Temporary fall of temperature	21 d.	None	Cured
8	32	5	March 21, 22, 23	90	60	30	3	Common	Temporary fall of temperature	27 d.	Broncho-pneumonia	Cured
9	2	2	April 17	30	65	30	1	Fulminating	None			Death immediately
10	32	3	April 20, 21, 22, 23, 25	150	120	30	5	Severe	None	37 d.	None	Cured
11	30	3	April 30; May 1, 2, 3, 4, 5, 7	210	260	30	7	Severe	None	12 d.	Delirium tremens	Death
12	6	3	May 8, 9, 10, 11, 12, 13, 15	210	220	30	7	Severe	None	26 d.	None	Cured
13	16	4	May 8, 9, 10, 11, 13	150	140	30	5	Severe	Slight improvement in general condition	41 d.	Partial deafness of right ear. Ptosis and external strabismus left eye	Cured
14	9	3	May 10, 11, 12, 13	120	100	30	4	Mild	Fall of temperature from 103° F. to 98° F.	16 d.	None	Cured
15	16	9	May 22, 24, 25	75		30	3	Common	Slight improvement in general condition	33 d.	Refused further treatment	Death
16	2	4	May 30	25	22	25	1	Severe	None	23 hr.	None	Death in 23 hr.
17	14	4	June 8, 9, 10, 11	120	150	30	4	Mild	Fall of temperature with relief of general symptoms	15 d.	None	Cured
18	5	1	June 30; July 1, 2, 3, 4, 6	180	250	30	6	Fulminating	Fall of temperature from 103.5° F. to 98° F.	28 d.	Total deafness	Cured; total deafness
19	17	2	July 15, 16, 17, 18, 20	150	150	30	5	Fulminating	Temporary fall of temperature	7 d.	None	Death

Reports of Societies.

SPRING MEETING OF THE NEW ENGLAND BRANCH OF THE AMERICAN UROLOGICAL SOCIETY.

Boston Medical Library, Tuesday, May 12, 1908.

President, Oliver C. Smith, M.D., Hartford; Secretary, Richard F. O'Neil, M.D., Boston.

PYELONEPHRITIS. TUBERCULOUS KIDNEY. SPECIMENS.

Dr. A. L. Chute: I wish to show two kidneys that I trust may be of interest to you. The first shows the vast amount of destruction that may occur as the result of a pyelonephritis. The infection in this patient was due to a small fibrous prostate, one that showed almost no increase in size by rectum. At operation the prostatic tissue was dense and fibrous; it could not be shelled out, but had to be cut away with curved scissors. The amount of tissue removed was very small, weighing but a few drams. This kidney, which had given symptoms from time to time, could not ordinarily be felt, nor was it ordinarily painful or tender. About ten days after prostatectomy, just as the patient was getting around, the infection in the kidney flared up. Dr. Lund, who saw the patient with me, agreed to the advisability of a nephrectomy, which we did. An examination will, I think, convince you that the kidney was of little value functionally; the little subcortical abscesses made it seem improbable that the process would have quieted down. This patient made a slow but satisfactory convalescence.

The second specimen is a tuberculous kidney. As you can see, the kidney was extensively involved and contained several abscess cavities. The patient had practically no pain that was referred to his kidney. As is so often the case, his subjective symptoms pointed wholly to his bladder. The patient has made a good operative recovery. It is too soon to tell whether he will have complete relief as regards his symptoms.

I wish also to show two specimens that illustrate two types of renal calculus. The first is hard, rough and covered at least with oxalate of lime. The larger part of this calculus was in the kidney pelvis, while the smaller part projected into the cortex nearly to the capsule. This woman's first urinary symptoms appeared a year before and followed the passage of a catheter after an operation. It seems probable that her renal stone anti-dated her bladder infection.

The second specimen consists of two parts that are light and crumble easily. They are undoubtedly phosphatic. One knob of the dumbbell-shaped stone was in the kidney pelvis, while the other was in the renal substance. The second mass was entirely buried in the kidney tissue and was without evident connection with the pelvis or the other mass. According to this man's history he had had a urinary suppuration for several years.

SPECIMENS OF ENLARGED PROSTATES AND CYSTIC KIDNEYS.

Dr. O. C. Smith: I have three specimens to present which you may not consider of especial interest. The first two are unusually large prostates.

In a recent discussion of the subject of prostatectomy in New York, one of my friends who has had a large experience stated that he had returned from the perineal to the upper route, and I know that some of my friends here in Boston still favor the suprapubic operation.

We, myself and my immediate associates, have performed about one hundred prostatectomies, and while we occasionally employ the upper route, we firmly believe that our quickest and safest operations are performed through the perineum. We make a straight median incision, and have ceased using the tractor. In the majority of cases we encounter but little difficulty in performing the operation by this method.

The first specimen is a prostate from a very obese man who weighed over three hundred pounds. He had suffered from prostatic symptoms for three years, was urinating at intervals of fifteen minutes day and night, was rapidly losing flesh and strength, and was septic and despondent. In this case we followed, as we have in a number of others, the suggestion of Chetwood, namely, draining the bladder through the perineum, and a week or so later enucleating the prostate through the same incision.. To one who has not tried this two-step method, it is pleasing to discover how easy it is to get into the lines of cleavage and complete the operation at the second seance.

The second specimen is made up of three unusually large lobes, each one the size of a lemon. This patient had suffered from prostatic symptoms for twelve years, the trouble commencing at forty-eight. Complete retention had occurred several times, until finally no urine was passed without the catheter, and at last catheterization became exceedingly difficult. This large prostate was enucleated in less than five minutes.

In our last series of twenty-five cases we have had four in which a lobe of the prostate has dropped back into the bladder during operation, and while I was trying to devise some instrument to wear on my index finger to hook out such a lobe, I came across this instrument of Dr. Follen Cabot. I have not used it, but it seems admirably adapted to the purpose.

The third specimen is that of a large cystic kidney from a thin, delicate young woman who came to us with a movable cystic tumor in the right abdomen, extending to the pelvis. Cystoscopy by Dr. Stearn revealed the right ureter occluded. The tumor proved to be an unusually large cystic kidney. The patient made a good recovery.

Lastly I wish to present a method of keeping surgical records. I have printed sheets with head lines for all the desired data, the spaces being filled in by the stenographer from dictation. These are kept as loose sheets in a ledger casing and bound in book form in numbers of six hundred each. Then with card index system, one index for the name of the patient and one for the operation, the records are most accessible.

The President: It gives us great pleasure to welcome to-night Dr. Samuel Alexander, of New York. It is needless for me to tell you that he is one of the pioneers in the subject upon which he will address us. Much of the earlier scientific work which has been done in this country upon the prostate was accomplished by Dr. Alexander. We are honored and gratified in having him with us.

Dr. Alexander: I present here, Mr. President, a series of pathological specimens from twenty cases of prostatic abscess treated by prostatectomy. We have made very free use of our specimens for pathological examination, but these will show the multiplicity of lesions which are found in this very interesting condition.

Dr. Alexander then read a paper entitled

CONTRIBUTION TO THE SURGERY OF THE PROSTATE. PROSTATECTOMY IN THE TREATMENT OF PROSTATIC ABSCESS OF GONORRHEAL ORIGIN.

DISCUSSION.

Dr. A. T. Cabot: It is a very great privilege to have with us to-night the pioneer in perineal prostatectomy, and it is a great pleasure to find that Dr. Alexander is still exploring new fields in this branch of surgery and is bringing them to the attention of the profession.

In connection with the operation I have no criticism to offer because I have no experience. The paper has been a very great pleasure for me to hear, and I shall certainly try to carry out some of the lessons that it has taught. I was surprised and interested to hear that removal and drainage was equally good in these cases of prostatic abscess as in prostatectomy without abscess.

Dr. Paul Thorndike: I was one of the fortunate ones who had the opportunity of listening to Dr. Alexander's paper in New York four years ago, in which he advocated opening the urethra and draining a prostatic abscess through the prostatic urethra. And since that time I have, as I so often do, followed in his footsteps in this as in other directions. In these cases I have had very good luck, and, barring a few cases of one-sided epididymitis, have had no important complications. I am very much struck with the completeness with which drainage is established and the short time necessary to allow the inflammatory process to subside.

With the removal of the entire remains of the prostate in such cases I have had no experience, barring two or three cases of tuberculosis of the prostate, in which such a removal has been done. Dr. Alexander has carefully refrained from speaking of tuberculous prostates, and I shall say nothing about them.

Prostatectomy is certainly the rational outcome of surgical thought in this direction. Any one who has had his finger inside that capsule and realizes the variety of conditions that may be present there, knows that it must be very difficult sometimes to get complete drainage by approaching through the perineal urethra and draining in that way.

In my own cases I have been surprised at the good results. They certainly have been better than the cases drained in the old way.

Just one more word before I sit down. I have had the pleasure of seeing a good many of Dr. Alexander's early prostatectomies. I was in New York at the time when he was doing his early operations. I saw them and I talked with many men about them. I heard him about as thoroughly criticised in the late nineties as possible, and I want to say that I don't believe any one has a more complete realization of what he went through than I have. Every single one of the men I talked with at that time told me that Alexander was talking nonsense about the prostate. I believe that very few people realize the completeness with which we owe perineal prostatectomy, certainly in the eastern states, to Dr. Alexander. For that operation he has certainly been the consistent champion in this part of the country. I have always had the greatest respect for his work, and we owe him a great debt for it. This operation certainly has a wide field of usefulness. How great that field of usefulness is going to be in the future remains to be determined. Whether or not prostatectomy is to be used universally in these cases of abscess may be a question. To run the risk of sterility, for instance, for the sake of accomplishing the complete surgical result aimed at, may be a questionable procedure. But at any rate we can welcome Dr. Alexander again as a pioneer in prostatic work.

Dr. J. C. Munro: I dropped in to hear and to learn rather than to have anything to say. I have been very much interested and have highly appreciated Dr. Alexander's paper to-night. I have occasionally swung off from his teaching, but have always swung back again, and glad to get there.

Dr. Abner Post: Of course I have no experience in these operations. But Dr. Alexander's study of the pathology of prostatic abscesses, whether we are to follow the operation or not, is very enlightening, and we are indebted to him for a knowledge of otherwise obscure cases. I can look back upon a great many cases which are now made clearer to my mind by this explanation of the pathology.

Dr. H. Cabot: I should like to ask Dr. Alexander to tell us more about the selection of cases for operation. It seems to me that this is the difficult part of the question. It is clear that there are cases of an extreme type where the operation is essential. But there are also cases of a milder type which occur during an acute urethral infection, which, as they quiet down, leave follicular swellings in the prostate which can be felt, and which, I take it, in many cases must be miliary abscesses. These cases sometimes go on to complete recovery, though it seems to me that there must have been miliary abscesses in the prostate. I should like to know where Dr. Alexander draws the line in these cases. The cases with evidence of massive abscess are clear. But there must be somewhere a lot of cases about which there is doubt. Where do you draw the line on cases which seem to be improving, where there is no retention, little or no fever, and yet evident swelling, thickening and induration of the prostate?

Dr. O. C. Smith: I should like to ask Dr. Alexander if he finds one lateral lobe involved, perhaps while the patient is suffering from typhoid or grip, whether he would not content himself for the time with opening the abscess unilaterally, and allowing the apparently good lobe to remain and functionate. One of the best physicians in our state had a severe prostatic abscess with intense toxicity. He was treated in this way and made a good recovery, has had no recurrence and has been recently married.

Dr. B. Tenney: I should like to ask in regard to the results after perineal section without enucleation of the prostate, whether they continue to drain pus for a time.

Dr. Alexander: Dr. Cabot asks where to draw the line in the choice between perineal section and drainage and prostatectomy. My feeling is the reverse of Dr. Cabot's in regard to the first cases he mentions. He said that it is clear that prostatectomy is indicated in cases of large abscess where you find a large focus of infection. Those cases I should say are best for perineal drainage because the most of the prostate is already destroyed.

I do not think that the necessity for prostatectomy in prostatic abscess can always be determined before opening the urethra through the perineum. The indications for an operation, whether perineal section and drainage or of prostatectomy, are very definite, but it is only by examination of the prostate by the finger passed into the prostatic urethra through a perineal opening that the necessity for prostatectomy can be positively known.

In answer to Dr. Smith's question as to operation upon prostatic abscess due to typhoid or infections other than gonorrheal, I would say that in my paper I considered only abscesses of gonorrheal origin, and I made this fact clear. Of course if I had to treat a single focus of suppuration in the prostate due to typhoid infection, or any other infection, I would simply open and drain the abscess into the perineal opening and would not do a prostatectomy. If only one lobe of the prostate was the seat of multiple abscesses I would remove only the affected lobe. There is no absolute rule to guide the surgeon. The condition found at the time of operation must determine the extent of the operation, just as it does in all surgical procedures.

The treatment of these conditions of suppuration of the prostate is not settled; one surgeon treats them by massage, another by dilatation, etc. There is no concensus of opinion as to how they should be treated. There are few definite statements anywhere in the literature in regard to what the pathological conditions are that we are treating, and treatment is largely empirical. In view of this, it seems to me that the operations I suggest are justifiable; that as we really cure the cases, and the men accept the risk, we are justified in performing them, provided we do it skillfully and inflict no unnecessary harm on the patient.

I want to thank Dr. Thorndike for his very gracious words. In regard to my work upon the prostate I should like to say a word. In 1888 or 1889 I came to the conclusion that prostatectomy was an operation of value, but that it could not become a popular operation until the anatomy of the prostate was better understood. I began to collect post-mortem specimens of enlargement of the prostate. I collected and studied more than one hundred during the next ten years. I made photographs, lantern slides and serial sections, and had the honor to give many demonstrations both at home and abroad. After my first paper in 1904, when I insisted upon the median perineal operation as the operation of choice, I had little to say about operation, but continued to insist upon the necessity for an anatomical basis for our work. I take great satisfaction in knowing that the fundamental views for which I labored are now universally adopted by the profession.

One question asked was in regard to the results of perineal section and drainage. A number of cases treated thus get well, but others do not. As you see by these tables, I have in the first two months of this year done three cases of perineal section and drainage for prostatic abscess, cases in which one lobe had been practically destroyed. There was nothing left to take away on that side, but I left the other lobe. I have not abandoned altogether perineal section and drainage. I still consider this a good method, but the question is whether prostatectomy is not a better method in the majority of cases.

As to the results of this operation on the sexual function, this is a more important question than in cases of prostatectomy in older men with enlarged prostates. We have been able to examine most of our patients and we have found that in no case has there been a complaint in regard to the character of the erection or the ability to have sexual intercourse. The sensation is not impaired, but a discharge of seminal fluid at the time of the orgasm is entirely absent.

I do not wish to force my views at the present time upon any one. The subject is a new one. It is a grave responsibility for any surgeon to enter a new field of surgery and publish the results of his work without due deliberation. It would be absurd for any surgeon to insist that this is the only method for the treatment of prostatic abscess.

We know the history of perineal prostatectomy. We know that operations are frequently performed by men wholly ignorant of the region and the pathology of the disease, and we see the bad results which follow these operations. But we also know that no operation in genito-urinary surgery has done so much good and is now upon a firmer scientific basis than prostatectomy for enlarged prostate. It gives me pleasure to look back over twenty-five years and to know that under all the changes of fashion and method that have taken place in treatment, I have never wavered from my original declaration that prostatectomy through the median perineal incision was the operation of choice. I have never done a case of castration or of Bottini's operation for enlargement of the prostate. I therefore offer with confidence this new suggestion in the treatment of prostatic abscess based on the anatomy and the pathology of the disease, and I think it will commend itself to those who will carefully employ it. And, while I do not wish to urge it as the only method of treatment, and although no one appreciates more than I do the nature of the operation, I think that as our knowledge of infectious diseases of the prostate becomes more accurate, it will become apparent that these suppurative conditions cannot be treated by such methods as dilatation and massage. I believe that these methods will have their day and that the principles underlying the operations which I present for your consideration to-night will receive the endorsement of those who have tested them experimentally.

THE AMERICAN THERAPEUTIC SOCIETY.

NINTH ANNUAL MEETING, HELD IN PHILADELPHIA PA., MAY 7, 8 AND 9, 1908.

(Continued from No. 18, p. 588.)

FRIDAY, MAY 8.

SYMPOSIUM ON THE TREATMENT OF TUBERCULOSIS.

THIS was opened by DR. LAWRENCE F. FLICK, Philadelphia, who said that restoration of the individual to a normal physiological functional capacity and stimulation of his intrinsic disease-resisting qualities constituted in a broad sense the modern treatment of tuberculosis. As a rule the tubercle bacillus was not very virulent, and there was reason to believe that without mixed infection, tuberculosis would never kill in the human being. Clinical experience would seem to indicate that it was only when the tubercle bacillus was joined by other micro-organisms for the destruction of tissue that the disease took on a serious form. It was this mixed infection which manifested itself by symptoms which attracted the attention of the patient or those associated with him and which had given us the clinical picture of consumption. Want, hardship, overwork, dissipation, improper feeding, alcoholism and tobacco, all played a part in preparing the individual for mixed infection and the destructive action of the tubercle bacillus in association with other micro-organisms, such as the streptococcus, the staphylococcus, the influenza bacillus, and perhaps even the pneumococcus. As tuberculosis was essentially a local disease, and consequently an ever-recurring disease, until all the tissues of the body became invaded, the prevention of implantation or auto-infection, as it was sometimes called, was absolutely necessary for the successful treatment of the disease. It was therefore requisite to teach the patient methods of disposing of his broken-down tissue in such a way that no tubercle bacilli could get back into the system, either through food or air. The curative treatment over and above that which came from prophylaxis consisted of proper direction of the patient's life and of medication. The diet should be regulated with one idea in mind, namely, getting the best amount of nutrition with the smallest amount of consumption of energy in producing it. The consensus of opinion seemed to be that milk and eggs should always be important factors in the diet. The subject of forced feeding, however, was much misunderstood, and harm had been done by over-feeding. When milk and eggs were used largely, solid food should be proportionately cut down, and a good plan was to give each day one meal of solid food and besides this three quarts of milk and six raw eggs. At the solid meal, meat, fresh vegetables and fresh fruit might be used. If the patient was suffering from mixed infection he should be put at absolute rest until the mixed infection had been overcome. When activity of the process had ceased, occupation might be taken up, but it should be followed in moderation. A person who had had tuberculosis should recognize his limitations and always remain within the limits of fatigue. For recovery, a patient should live in a house which was well ventilated, well drained, dry and free from dust. He should be taught to sleep in the open air if possible, and if not in the open air, at least in a room with all the windows open. The drug which was of most value in the treatment of tuberculosis was iodine. This was given to greatest advantage by the skin, and Dr. Flick's own practice was to have the body well rubbed twice a day with a saturated solution of europhen in olive oil, with a little oil of gaultheria and oil of anise. Nitroglycerin was of service when the heart was over-acting, and was indicated when there was an accentuated second sound, as was found after recent pulmonary hemorrhage; it was also useful in preventing hemorrhage. Magnesium sulphate was valuable when the kidneys were beginning to give signs of over-work and in cases of intestinal tuberculosis. Digitalis might be given when the heart was weak. Creasote was perhaps of most service in advanced cases. It was best given in hot water, and in this way as much as 60 minims could be taken three times a day. Pepsin and pancreatin were of value in most cases as adjuncts in forced feeding. Tuberculin could be safely used in small doses in cases in which there was no mixed infection. Large doses should never be given except by experienced men. In conclusion, the necessity of looking carefully after the teeth, pharynx and tonsils was referred to.

Dr. M. H. Fussell, Philadelphia, read a paper on

THE TREATMENT OF TUBERCULOSIS IN PRIVATE PRACTICE.

The present-day sanatorium treatment of the disease, he said, was so satisfactory that the principles underlying it—early diagnosis, rest, food and fresh air — must be conceded as correct. It was manifestly impossible, however, that all tuberculosis patients should be treated in sanatoria. Early diagnosis was imperative on the part of the family physician if we were to have a reasonable expectation of saving our patient, but while the early diagnosis was desirable and necessary, it was none the less imperative that we should not make a diagnosis of tuberculosis unless we were reasonably sure of it. He believed that every physician doing general practice should visit some well-conducted sanatorium and take careful note of the methods employed there. As to giving patients fresh air, — if nothing but the windows of the house were available, the sashes should be taken out, or either have a balcony to contain a bed put up outside a window, or a canopy arranged so that the patient should be bathed in fresh air while still in the room. The patient should not be allowed to stay in the living room, where the windows and doors were shut. If a porch were available, the bed should be placed there, while if a plot of ground were available, the patient should by all means sleep in a tent on it, provided with a floor. The rest patients got, their freedom from worry, was, next to fresh air, the most important element of the great success of sanatorium treatment, and he believed that we were playing with fire when we allowed patients with active tuberculosis to engage in business or do their home work. Their business was to get well. Some patients appeared to think that if they were not working they could go about to ball-games, riding, etc., as much as they chose. Nothing was further from the truth. The undue exertion in a long walk might so outweigh the value of the fresh air that the patient would be the worse for the outing. Having referred to the matter of diet, the speaker said that many drugs were of value, though they should be considered subsidiary to hygienic treatment if we were to cure our patients. Prophylaxis was all-important, and he was convinced that if every particle of sputum of tuberculosis patients, as well as their feces and urine, could be absolutely destroyed, it would be a matter of relatively short time when tuberculosis would cease to exist except as a rare disease. He then detailed the instructions on this subject which should be given to patients. Notwithstanding our best efforts, many patients would die. It was assuredly true, as Osler had said in his address before the Phipps Institute, a few years ago, that we all talk too lightly of curing tuberculosis. Dr. Fussell believed that, if the actual statistics of cures in private practice could be obtained, the percentage would be comparatively small. This result was not the fault of the system. The theory was right, and it was our duty to carry it out. Some of the blame must be given to general practitioners. We refused to believe a patient had tuberculosis until too late, attributing his disability to malaria or some other possibility. In other words, we did not make an early diagnosis. There were other factors, however, in our bad results. Thus, it was almost hopeless to get the father or mother of a family to undergo a proper course of treatment until the disease was far advanced and cure out of the question. We should impress parents when we saw them early, that if they hoped to have more than one chance in ten of living to help their children they must make some sort of financial arrangement to carry out the treatment for a long period. This was the vital question. When we saw a woman with a large family and a house to care for, we must make it possible for her to take proper treatment. We would not have done our full duty until we had done this. In conclusion, he said that the more he practiced the treatment carried out in sanatoria the more hopeful he became. It was far superior for the patient's relief and occasional cure than any other means, and we must practice it. When we had so educated ourselves that we made an early diagnosis in every case, when we applied the system to doubtful cases, and when we educated the community to the point that it recognized that it was economical to so treat patients, the home treatment would approximate sanatorium treatment in effectiveness, and sanatorium treatment would be far in advance of its present results.

Other papers read in the symposium were, "Tuberculosis of the Ear," by Dr. W. Sohier Bryant, New York; "Some Dietetic and Therapeutic Points in the Home Treatment of Tuberculosis," by Dr. H. S. Anders, Philadelphia; "Tuberculosis among the Insane," by Dr. Frank Woodbury, Philadelphia; "On the Choice of Occupation for Tubercular Patients," by Dr. A. E. Roussel, Philadelphia; and "The Treatment of Tuberculosis in Children," by Dr. W. C. Hollopeter, Philadelphia.

DISCUSSION.

In the discussion, Dr. James Anders, Philadelphia, having remarked that expert knowledge was required to arrange the various details of the treatment, hygienic, dietetic and medicinal, said with reference to the climatic treatment that he frequently saw disastrous results from the want of care in the relation of the particular climate or health resort. Too often — and this fact, he thought, could not be emphasized too strongly — the selection was made with sole reference to the condition of the lung, and not to the general condition of the patient. There was a consensus of opinion at the present day that the element of treatment of first consideration was rest, but he found that too little attention had been paid to the question of how this could be most effectively secured. Rest in the true sense of the word meant practical exclusion or seclusion. The principal objection to rest properly enforced was its depressing effect upon the patient, and when he found that it had such an effect he was in the habit of allowing the patient to associate once or twice daily, for an hour or two, with some members of the family or other suitable persons.

DR. SAJOUS said he fully agreed that the treatment by fresh air, food, etc., was most important, but he was convinced that those who depended on these alone did not get as good results as those who made use of remedies in addition. There was no such thing as a specific treatment, but there was such a thing as a specific combination of factors which was of great assistance. Dr. Flick had referred to the excellent effect of iodine preparations, and if we realized the fact that iodine really sensitized the bacteria precisely as the opsonins of Wright did, we could understand the fact that this agent placed the patient in a position to fight his bacteria most actively. He did not agree that creasote was useful only in advanced cases. He had had excellent results with it, and said that in the form of the carbonate administered as of capsules it might be given in very large doses without any disturbance of of the stomach. It was most advantageously taken in the middle of a meal. By giving, in addition, 1 gr. of thyroid extract three times a day we got the benefit of iodine without any of the drawbacks of that drug.

(To be continued.)

Book Reviews.

Diagnosis by the Urine. By Allard Memminger, M.D., Professor of Chemistry and Hygiene, and Clinical Professor of Urinary Diagnosis in the Medical College of the State of South Carolina, etc. Third edition, enlarged and revised, with 27 illustrations. Philadelphia: P. Blakiston's Son & Co. 1908.

This is a small book briefly outlining the ordinary methods of urinary analysis. The author also devotes some space to diagnosis, in which he lays particular stress on the diagnostic importance of absolutes and relative absolutes of solids and urea in urine.

The Principles and Practice of Hydrotherapy. A Guide to the Application of Water in Disease. For students and practitioners of medicine. By SIMON BARUCH, M.D., Professor of Hydrotherapy in Columbia University (College of Physicians and Surgeons), New York. Third edition, revised and enlarged, with numerous illustrations. New York: William Wood & Co. 1908.

This book, now in its third edition, has been accepted as a wholly reliable treatise on the subject of hydrotherapy. Since the previous edition, its author has been elevated to a professorship in hydrotherapy in Columbia University. There could hardly be stronger evidence of the position which treatment by water has come to occupy. This edition differs in no material way from its predecessor and continues to serve as an excellent exposition of the theory and practice of hydrotherapy.

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STUDENT ENROLLMENT AND THE ELEVATION OF MEDICAL STANDARDS.

A STRIKING development of the past decade has been the elevation of standard in the medical schools of this country, brought about by the closer association with universities and a recognition of the dignity of medicine as a department of liberal learning. This rather rapid development of the medical sciences has naturally had many consequences, some of which might have been foreseen, but many of which could not have been anticipated. The only matter to which we wish to call special attention at this time is the effect this continued elevation of standard has had and is likely to have in the future upon the number and character of the men electing medicine as their life work. At this season of the year, when the schools are beginning another term, it is a matter of interest to note in a general way the registration of new students at the more representative medical schools.

Before the opening of the fall term we ventured to prophesy that the numbers of new students under present requirements might be disappointing to those who are expecting an increase proportionate to an increase of facilities for study. This surmise has in a measure been justified by the results of this fall's enrollment. In several of our leading schools requiring high attainment as a prerequisite to entrance, the registration of new students has been disappointingly small. One naturally seeks for reasons for this state of affairs. It is pointed out that opportunities, both on the laboratory and clinical side, have never been so adequate as now, and that medicine offers many possibilities of research unknown to our predecessors, nevertheless law and particularly business are more popular to the average man of collegiate training. It is significant as a recognition of a prevailing tendency that two colleges have of late determined on the foundation of departments for instruction in business method.

When the course in medicine a number of years ago was changed from three to four years, it was predicted that there would be a definite falling off in students. This did occur for a very brief period, and then followed a decided increase over the number before the change was made. This has, however, not happened since the requirement of a bachelor's or equivalent preliminary degree. The increase of students has been sporadic and inconstant and has not justified the hopes of those who have regarded increased requirements as a bait which ultimately could not fail to draw students.

No doubt the causes for the present state of affairs are complex and dependent upon many conditions difficult of analysis. It is, however, not to be questioned that the postponement of the time of self-support to twenty-six or later is a most serious consideration to many men, and that not a few who would be ornaments to their profession are forced to take an inferior course in medicine, or to seek other means of self-support. This latter attitude is the more encouraged, because of the widening opportunities for usefulness in the various applied sciences, and now last of all in what will, no doubt, become the science of business administration. Inasmuch as the graduate in medicine who is already the holder of an academic degree is almost sure to begin his independent work in a large center of population, for which his long education has fitted him, the opportunities for self-support must be correspondingly diminished. The cities are overcrowded and the country regions will inevitably suffer. The student of ambition but of modest means must, therefore, hesitate long before undertaking a protracted course of study, the practical worth of which is at best indefinite.

It is not to be questioned that an elevation of standard has been a salutary and wholly necessary step in the development of medical instruction in this country, but we are now feeling the reaction as exemplified in the evident hesitation of young men to enter upon the study of medicine following the attainment of their collegiate degrees. In viewing the question broadly, it must also be borne in mind that whereas a few years ago there were very few medical schools of high standard in the country, now there are many, and by no means confined to the eastern states. Students are now seeking their medical training near home, whether it be in the Middle West or on the Pacific coast, and the older but not more progressive schools suffer in consequence. It is apparent that a certain equilibrium has been reached; that the supply of schools is wholly equal to the demand upon their resources, and that the medical profession is showing its overcrowding not only in the increasing difficulty in gaining recognition in practice, but also in the hesitancy on the part of young men to begin its study. Speculation as to the reasons why certain schools show an increase or a decrease in students any given year or series of years is, no doubt, entertaining but somewhat profitless in a consideration of the more fundamental problem. Equipment, buildings, distinguished and widely-known men, good teachers and general prestige, all must play a part, and should receive serious consideration in arriving at a complete analysis of the situation, but far more significant than such reasons, we are convinced, is the underlying question which presents itself to every prospective student and his parents: Is the end likely to justify the means; is the future sufficiently assured to warrant the expense and time entailed; is there need of more doctors in the rank and file of the profession? In other words, the problem is a practical one, and, leaving aside its unquestioned intricacies, must be met on that basis. Looked at from this standpoint there is no reason to anticipate that our medical classes will continue to increase in the future as they have in the past year by year. This should occasion neither disappointment nor surprise. We are at present at work in our schools of highest standard in training a few well-equipped men to positions of probable leadership in our larger cities. We question whether the full duty of a great medical school is thereby fulfilled.

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LUMBAGO AND SPINAL RHEUMATISM.

The nature of lumbago has been, and still is, a much discussed question, and at the present time opinions widely differ. In a very interesting study Picaud has endeavored to demonstrate that, at least in some cases, lumbago should be considered as a mild type of meningomyelitis of rheumatic nature, as is also admitted by Faisans. Lumbago is perhaps more generally believed to be a muscular rheumatism, but Robin and Londe think that in such circumstances it acts more like a rheumatic arthritis, as in the case of torticollis. The sacro-iliac joint, the joints of the vertebral bodies and their articular apophyses are the seat of the lesion, and on this account one finds several tender spots over the sacro-iliac symphyses, areas of interspinous pain corresponding to the intervertebral joints, and lateral tender spots corresponding to the articulations of the apophyses or vertebræ. Goldthwait has shown the importance of recognizing a hypertrophic arthritis in these cases. On the other hand, Faisans, adopting an opinion long ago advanced by Andral, admits, on account of the bilaterality of the symptoms, the nervous phenomena which sometimes accompany them, as well as the occurrence of relapses, etc., that it is more probable the affection is a form of rheumatism of the cord and its envelopes, at least in a certain number of cases.

The treatment of lumbago is quite as varied as the opinions regarding its nature. Local medication seems to have been resorted to above all others. However, according to Robin, jaborandi is excellent. He employs 4 gm. of the leaves macerated in 10 gm. of alcohol for from eight to ten hours, and to this maceration 150 gm. of boiling water are added. This is taken in one dose in the morning before breakfast, the only contra-indication being some cardiac lesion. The administration of the salicylates has also met with success, and in cases of lumbago of medium intensity 4 gm. of sodium salt may be given at the beginning of the attack. Later on the dose may be diminished or replaced by a coal tar product, but only when a decided amelioration is manifest. The salicylates are contra-indicated in cardiac disease, nephritis and alcoholic subjects. In many cases, rest in bed, a few scarifications over the lumbar region and a milk diet, if the temperature is high, will be all that is necessary.

MEDICAL NOTES.

Lord Rector of Edinburgh University. — Mr. George Wyndham, M.P., was elected to the Lord Rectorship of Edinburgh University Oct. 24, receiving 826 votes. Mr. Winston Churchill received 727 votes, and Dr. William Osler, 614.

Lowell Lectures on "Defenses against the Micro-Organisms of Disease." — Prof. Theobald Smith, of the Harvard Medical School, will give eight Lowell lectures on the above subject, beginning March 16 and continuing every Tuesday and Friday.

The H. K. Cushing Laboratory of Experimental Medicine. — At the dedication of the H. K. Cushing Laboratory of Experimental Medicine, at the Medical School of Western Reserve University, on Friday, Nov. 20, Prof. W. H. Welch, of Johns Hopkins University, will deliver the address.

Examination, Public Health and Marine-Hospital Service. — A board of commissioned medical officers will be convened to meet at the Bureau of Public Health and Marine-Hospital Service, 3 B Street S. E., Washington, D. C., Monday, Jan. 11, 1909, at 10 o'clock a.m., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health and Marine-Hospital Service.

Candidates must be between twenty-two and thirty years of age, graduates of a reputable medical college, and must furnish testimonials from responsible persons as to their professional and moral character.

The following is the usual order of the examinations: 1, physical; 2, oral; 3, written; 4, clinical.

In addition to the physical examination, candidates are required to certify that they believe themselves free from any ailment which would disqualify them for service in any climate.

The examinations are chiefly in writing and begin with a short autobiography of the candidate. The remainder of the written exercise consists in examination in the various branches of medicine, surgery and hygiene.

For further information, or for invitation to appear before the board of examiners, address "Surgeon-General, Public Health and Marine-Hospital Service, Washington, D. C."

Protection against Typhoid Carriers. — The State Board of Charities of New York suggests to the institutions under its control that inmates recovering from typhoid fever should be retained in quarantine until bacteriological examinations show them to be free from typhoid bacilli.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Nov. 3, 1908, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 94, scarlatina 49, typhoid fever 20, measles 39, smallpox 0, tuberculosis 55.

The death-rate of the reported deaths for the week ending Nov. 3, 1908, was 17.11.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Oct. 31, 1908, was 232, against 244 the corresponding week of last year, showing a decrease of 12 deaths and making the death-rate for the week 19.55. Of this number 120 were males and 112 were females; 228 were white and 4 colored; 150 were born in the United States, 77 in foreign countries and 5 unknown; 50 were of American parentage, 136 of foreign parentage and 46 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 115 cases and 6 deaths; scarlatina, 61 cases and 1 death; typhoid fever, 27 cases and 3 deaths; measles, 32 cases and 0 deaths; tuberculosis, 63 cases and 20 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 25' whooping cough 2, heart disease 30, bronchitis 2 and marasmus 7. There were 14 deaths from violent causes. The number of children who died under one year was 50; the number under five years 68. The number of persons who died over sixty years of age was 76. The deaths in public institutions were 84.

Cerebrospinal meningitis, 2 cases and 1 death.

Tuberculosis and its Prevention. — Under the title, "Tuberculosis and Its Prevention; Suggestions to Teachers," the Massachusetts Board of Education has issued a small pamphlet of twenty-three pages in which is given in succinct form a statement of ascertained knowledge regarding tuberculosis, its history, methods of extension, symptoms and prevention. The subject matter has been prepared by Drs. A. T. Cabot, H. C. Clapp, E. O. Otis, H. D. Arnold, Cleaveland Floyd and John B. Hawes, 2d.

Death Roll in the Maine Woods. — This year has been an unusually unfortunate one as regards the death and injury of persons in the Maine woods during the hunting season. Nine persons have been killed and seven badly wounded during the first month of the hunting season. Of those wounded two were mistaken for deer, one for a duck and one for a squirrel. It is suggested that legislative action be taken against the use of high-powered rifles, which it is claimed are unnecessary in the killing of game and exceedingly dangerous to those who may be in the range of fire.

Resignation of Dr. B. R. Rickards. — Dr. B. R. Rickards has resigned as director of the bacteriological laboratory of the Boston Health Department to accept a position as director of the Ohio State Board of Health Laboratory at Columbus. Dr. Rickards received his preliminary education at the Massachusetts Institute of Technology, where he studied particularly under Prof. W. T. Sedgwick. The year after his graduation he taught chemistry at the Lowell Textile School, entering upon his work at the Boston laboratory in 1900. He has had charge of the department since the resignation of Dr. Hill several years ago. The position which he accepts at Ohio is one of broader possibilities than the one he leaves. In addition to the bacteriological laboratory, he is to have charge of another for the chemical analysis of water and sewage. The new position, also, covers the entire state, and carries a larger salary. In both Dr. Hill's case and Dr. Rickard's we cannot but feel that Boston suffers a loss.

NEW YORK.

National Health Legislation. — On Oct. 29, Dr. Charles H. L. Reed, of Cincinnati, chairman of the Committee on National Medical Legislation of the American Medical Association, made an address before the New York Academy of Medicine. Having sketched the history of the movement to secure adequate legislation and stated that President Roosevelt had promised that in his next message he would transmit to Congress with his emphatic endorsement definite proposals in accordance with the recommendation of the American Medical Association, he said that it now devolved upon the 130,000 physicians in the Unitied States, not only to support the President in this position, but to anticipate the proposed legislation by a persistent campaign in behalf of this fundamental feature of the public welfare. He argued for the education of the people in matters of health and the need to impress upon them that "the army of bacilli already encamped in our homes is a host more numerous than all the enlisted men in all the armies in all the world in all ages, and each individual bacillus is capable, under certain conditions, of destroying human life." He referred to the increasing mortality from cancer, and declared that "if only one half the persons who now die or are incapacitated as a result of tuberculosis and typhoid fever were saved, it would mean a saving in money sufficient to maintain a national board of health, pay for the army and navy, fortify our coasts, duplicate our armanent on the seas, deepen our internal waterways and in ten years would pay for the Panama Canal and wipe out our national debt."

Dr. Simon Flexner on Vivisection. — In justifying the practice of vivisection in the development and perfecting of the serum against epidemic cerebrospinal meningitis that bears his name, in the course of which some thirty monkeys were employed at the Rockefeller Institute, Dr.

Simon Flexner, in a recent interview, remarked that monkeys were not so sensitive as human beings and that no one who had lost a child by death, noted its sufferings in illness or felt its helplessness would hesitate at such a sacrifice. He then gave expression to the following sentiment: "If I could be assured that a cure for tuberculosis would be the result, I would gladly be one of thirty men to sacrifice my life for such a discovery. What is more, the other twenty-nine men would be forthcoming; there would be plenty of volunteers. Men risk their lives in wars and deeds of daring. In war the lives of thirty men do not count for much. We are constantly sacrificing ourselves for ends less momentous than this cure for disease." In speaking of the new hospital in connection with the Institute, which was provided for in the last gift from Mr. Rockefeller, and the foundations of which are now under way, Dr. Flexner said: "There is a fine thought back of this hospital. So far as we know, there will be accommodations for about sixty patients suffering from obscure or dangerous ailments. These men, women and children will be kept in the hospital and under observation without any consideration of the money involved. Every appliance, all the time and enough attendants will be provided in each case to insure the welfare of the patient and the success of our observations. Thus we will be enabled, even more than now, to secure our problems of research from human pathology."

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Current Literature.

New York Medical Journal.

Sept. 26, 1908.

1. Stengel, A. *Exophthalmic Goiter from the Medical Standpoint.*
2. Oliver, J. *Early Relationship of the Oösperm to the Endometrium.*
3. *Bodine, J. A., and Keller, F. C. *Injection of Alcohol for Relief of Trigeminal Neuralgia.*
4. Tuttle, J. P. *Cancer of the Rectum.* (Concluded.)
5. Douglas, J. *The Leucocyte Count in Abdominal Surgery.*
6. Holladay, G. G. *Gunshot Wounds of the Abdomen.*
7. Bero, E. J. *Types of Pneumonia associated with Inflammation of Adenoid Growths.*

3. Bodine and Keller cite fifteen cases of trigeminal neuralgia in which deep injections of alcohol were given, with partial to complete relief of pain in every case. The technic used is that recommended by Lévy and Baudouin. Their results confirm the experience of various other observers. The author believes that this relatively simple procedure should by all means precede the consideration of surgical attack. [R. I. L.]

Oct. 3, 1908.

1. Bainbridge, W. S. *Irremovable Cancer.*
2. Wilbur, C. L. *International Classification. Its Advantages, Defects and Deficiencies.*
3. Mills, W. S. *Psychologic Tests made on Tuberculous Patients.*
4. Woods, B. F. *After-Treatment in a Series of Forty-four Laparotomies.*
5. Bonnar, J. D. *Apoplexy, Its Causes and Treatment.*
6. Henson, J. W. *Repair of the Perineum.*
7. Foster, F. P. *Apoplexy in the Classification of Disease.*

The Journal of the American Medical Association

Sept. 26, 1908.

1. Graham, E. E. *Infant Mortality.*
2. Collins, E. T. *Developmental Deformities of the Crystalline Lens.*
3. Pearce, R. M. *Spontaneous Arterial Degeneration in the Rabbit.*
4. Sinkler, W. *Three Cases of Cerebellar Tumor.*
5. Ballenger, W. L. *The Meato-Mastoid Operation in Chronic Mastoiditis.*
6. Wiener, M. *Restoration of the Conjunctival Cul-de-Sac for the Insertion of an Artificiol Eye.*

Oct. 3, 1908.

1. Dock, G. *The Development of Our Knowledge of Exophthalmic Goiter.*
2. Hirschman, L. J. *Prolapse of the Rectum and Sigmoid Flexure following Hysterectomy.*
3. *Roberts, J. B. *Surgical Importance of Cervical Ribs to the General Practitioner.*
4. Abt, I. A., and Frank M. *Rachitic Erosions of the Permanent Teeth Associated with Lamellar Cataract.*
5. Gilliam, D. T. *The Adjustable Canvas Chair as an Aid to the Murphy Treatment of Diffuse Suppurative Peritonitis.*
6. Hanes, G. S. *A New Position for the Treatment of Diseases of the Rectum and Sigmoid Flexure.*
7. Canfield, R. B. *The Submucous Resection of the Lateral Nasal Wall in Chronic Empyema of the Antrum, Ethmoid and Sphenoid.*
8. Wile, U. J. *Comparative Experiments on the Complement-Binding Substances in the Serum and Urine of Syphilitics.*
9. Talley, J. E. *The Anemia of Hepatic Cirrhosis simulating the Pernicious Type.*

3. The x-ray has shown that cervical ribs are not uncommon. Many persons with this anomaly suffer no discomfort from it. The short, stumpy ribs seem to produce symptoms more readily than the longer ones. Symptoms often develop suddenly, and this is true in children as well as adults. The symptoms are usually those of pressure on vessels and nerves, apparently of obscure origin. The diagnosis is easy with the aid of the x-ray. If the symptoms are severe, excision of the anomalous cervical rib is indicated. [R. I. L.]

Bulletin of the Johns Hopkins Hospital.

September, 1908.

1. Cole, R. I., and Smirnow, M. R. *The Pro-Infective (Aggresive) Action of Normal Blood Serum.*
2. Stavely, A. L. *Acute and Chronic Gastro-Mesenteric Ileus, with Cure in a Chronic Case by Duodeno-Jejunostomy.*
3. Hamman, L. *The Statistics of Tuberculous Peritonitis from the Clinical Records of the Johns Hopkins Hospital.*
4. *Berkley, H. J. *Therapeutic Note on the Action of Lecithin in Exophthalmic Goiter.*
5. Denison, H. S. *Amboceptors and Complement in Typhoid Sera.*
6. *Sellards, A. W. *The Hemolytic Action of Bile and its Inhibition by Blood-Serum.*
7. Sellards, A. W. *The Effect of Heated Serum on Rouleaux Formation of Red-Blood Corpuscles.*
8. Hooker, D. J., and Eyster, J. A. E. *An Instrument for the Determination of Venous Pressure in Man.*
9. Bordley, J., Jr. *A Family of Hemeralopes.*

4. Berkley reports four cases of Graves' disease with marked improvement after the administration of lecithin and milk. Lecithin is apparently of no value without

milk and at least one liter of milk must be taken. If the alimentary tract is disordered, lecithin is contra-indicated. The writer has used lecithin in a number of cases of nervous asthenia with marked success. The effect is comparable to that of the bromides, only greater. His preparation is an alcholic solution of lecithin made from the yolk of the egg.

6. Sellards found that while bile and bile-salts are active hemolytic agents in vitro, the normal serum protects effectively against the hemolytic action of bile. This explains the absence of severe secondary anemia after a simple catarrhal jaundice. [R. I. L.]

The Lancet.

Sept. 26, 1908.

1. Jamieson, W. A. *Itching: its Causes and Treatment.*
2. Shaw, H. B., and Corner, E. M. *A Case of Embolic (? Thrombotic) Atelectasis of the Middle and Lower Lobes of the Right Lung.*
3. *Matthews, J. *Notes on the Therapeutic Application of Stock Vaccines in the Treatment of Bacterial Infections.*
4. Grant, L., Campbell, T. H., and Anderson, W. D. *Vaccines in General Practice.*
5. Shufflebotham, F. *The Sanitation of Mines.*
6. Evans, J. H. *The Formic Acid Derivatives in the Treatment of Cancer.*
7. Sorabji, A. M. *A Case of Ruptured Uterus.*
8. Tubby, A. H. *Diffuse Painful Lipoma of the Foot.*
9. Warrack, J. S. *Sanitation in a Territorial Camp.*
10. Evans, J. J. W. *Observations on a Case of Huntington's Chorea.*
11. Osler, W. *Note on French and German for Medical Students.*
12. Mason, F. S. *Notes on the Lactic Ferments as Therapeutic Agents.*

3. Matthews presents a number of cases in which stock vaccines have been used in the treatment of bacterial infections. He gives the dosage in detail and the subsequent course of the cases. He has stock vaccines as follows: Tubercle vaccine, staphylococcus vaccine, streptococcus vaccine, gonococcus vaccine and typhoid vaccine. He expects shortly to have a stock vaccine of micrococcus neofonnans. Lesions due to other organisms he treats with specially prepared autogenous vaccines. [J. B. H.]

British Medical Journal.

Sept. 26, 1908.

1. Fenton, W. J. *Clinical Lecture on Some Forms of Cardiac Arrhythmia from the Point of View of the Myogenic Theory.*
2. Hough, C. H. *Address on Some Requirements of Modern Surgery.*
3. Brahmachari, U. N. *Fatty Liver in Kala-azar.*
4. Crofton, W. M. *Some Cases of Vaccine Therapy.*
5. Powell, W. W. *Method of Operating in the Air-Distended Urethra.*
6. Seventy-Sixth Annual Meeting, British Medical Association. *Section of Laryngology, Otology and Rhinology.*
7. McBride, P. *Discussion on the Treatment of Chronic Inflammatory Conditions of the Oro-Pharynx.*
8. Barr, J. S. *Paralysis of the Sixth Cranial Nerve in Aural Disease.*
9. Ouston, T. G. *New Operation for Depressed Fracture of the Nose.*
10. Wylie, A. *Cervical Tumors simulating Enlarged Glands Associated with Laryngeal Paralysis.*
11. Grant, D. *Use of Bougies for the Dilatation of the Infundibulum of the Frontal Sinus.*
12. Neil, J. H. *Some Points on the Anatomy and Surgery of the Tonsils.*
13. Kelly, A. B. *Some Experiences in the Direct Examination of the Larynx, Trachea and Esophagus.*
14. Waggett, E. *Direct Laryngoscopy, Bronchoscopy and Esophagoscopy.*
15. Guthrie, T. *The Development of the Middle Ear.*
16. Parker, C. A. *Accessory Air Cells in the Septum Nasi.*
17. Williams, P. W. *Method of Operating for Pansinusitis.*

Section of Diseases of Children.

18. *Tubby, A. H. *Discussion on the Surgical Treatment of Infantile Paralysis.*
19. *Gray, H. T. *Some Remarks on Herniae in which Meckel's Diverticulum was Present.*
20. Eve, F. C. *Two Clinical Types of the Meningococcus and their Bacteriological Differentiation. Illustrated by Three Sporadic Cases.*
21. Wynter, W. E. *Treatment of Chorea.*
22. Corner, E. M. *Surgical Treatment of Tuberculous Glands in the Mesentery.*
23. Clarke, J. J. *Some Practical Points in the Treatment of Tuberculosis of the Spine.*
24. Bowen, W. H. *Two Cases of Pneumococcol Peritonitis in Children.*
25. *Carpenter, G. *Nephritis in Infancy.*
26. Harris, W. *Ischemic Myositis and Neuritis.*

18. Tubby writes on the surgical treatment of infantile paralysis. He discusses in general the course of the disease and then briefly mentions mechanical treatment. He speaks of the value of tenotomy and its limitations, and goes into some details in regard to arthrodesis. He then discusses more at length tendon and muscle transplantation, particularly as regards the time for the operation. He believes that it should not be undertaken until it is quite certain that the paralysis is irremediable by the palliative methods of treatment. He discusses the causes of failure of tendon and muscle transplantation. He reviews the work which has been done on nerve anastomosis and nerve grafting, and is of the opinion that muscles can be brought to life and to resume their proper and independent functions by these means.

19. Gray gives some general remarks on herniae in which Meckel's diverticulum was present. He has looked up and discusses the previously reported cases of this condition, with the bibliography.

25. Carpenter, in speaking of nephritis in infancy, believes that not much headway will be made in this condition until the urine of infants is systematically examined in all cases. He also believes that careful examination of the kidneys of infants at autopsies should be made in every case. [J. B. H.]

The Practitioner.

August, 1908.

1. Battle, W. H. *Remarks on the Diagnosis of Iliac Swellings.*
2. Jones, R. *How to Secure Mental Health and How to Procure Mental Breakdown.*
3. *Rawling, L. B. *Surgical Treatment of the Incompletely Descended Testis.*
4. Gordon, A. K. *Some Experiments in the Treatment and Prevention of Infective Enteric Fever.*
5. Playfair, H. *Review of Some Recent Work in Gynecology.*
6. Ormond, A. W. *Treatment of Trachoma.*
7. Thompson, H. C. *Review of Some Recent Literature on Diseases of the Nervous System*
8. Taylor, F. E. *Major Operations in the Treatment of Puerperal Sepsis.*
9. Taylor, J. G. *Symptoms and Conditions of the Blood in Pernicious Anemia.*
10. Tylecote, F. E. *Condition of the Gums in Measles.*

3. Rawling summarizes his opinions as regards the treatment of incompletely descended testis as follows: The condition may be watched up to about the seventh year of life, after which operation should be advised in the case of failure in descent. If it is possible to replace the organ in its natural position after removal of cremasteric fiber and all restraining bands it should be done. If, however, this is apparently impossible, the testis should be removed. In cases of double incomplete descent, operative measures should again be carried out well before the age of puberty, the canal exposed, the testis delivered and the hernial protrusion cured. If the cord is fairly long the testis should be sewed to the scrotum. In other circumstances it is preferable that it should be allowed to remain in the inguinal canal. [J. B. H.]

SEPTEMBER, 1908.

1. McGAVIN, L. *Malignant Obstruction of the Esophagus.*
2. HALL, A. J. *Difficulties of Diagnosis.*
3. ENGLISH, T. C. *Cancer of the Breast; Indications for Operation.*
4. MOORE, F. C. *Striae Atrophicae as a Sequel of Acute Pneumonia.*
5. ROWLANDS, R. P. *Treatment of Wry-Neck by Lengthening the Sterno-Mastoid.*
6. *EVE, F. C. *Some Recent Advances against the Tubercle Bacillus.*
7. HICKS, H. T. *Pyelitis during Pregnancy.*
8. CUNNING, J. *Review of Recent Advances in Surgery.*
9. UPCOTT, H. *Review of Recent Work in Abdominal Surgery.*
10. JOWERS, R. F. *Case with Comments. "Pneumococcal Peritonitis."*

6. Eve, in a general article, covers the recent advances against the tubercle bacillus. He speaks along three lines: (1) The avenues of infection; (2) the intercommunicability of the human and bovine types of tubercle bacillus; (3) treatment by the production of immunity with or without the aid of the opsonic index. Under the first heading he speaks particularly of milk, and of the fact, which seems to be gaining ground, that the tubercle bacillus gains entrance generally by the bowel. Under the second heading he discusses Koch's position and the work which has been done to disprove his theories, and believes that there is already abundant evidence that tubercular cows ought never to be used to supply milk for human food. Under the third heading he speaks of the active and passive immunity in animals and men, together with some recent diagnostic methods, and his opinions upon the tuberculo-opsonic index. He discusses the various forms of tuberculin which have been used to create an artificial immunity in animals, which have been very successful; and in men, which have been less so. The conjunctival tuberculin test he does not believe is advisable. The subcutaneous test he believes should be used more than it is, and is very accurate and rarely does any harm. In regard to the vaccine treatment of tuberculosis, it is his opinion that the taking of the opsonic index in every case is unnecessary and that except in skilled hands it is not trustworthy. As to the results of vaccine treatment in tuberculosis, in early phthisis it may do much good, but it has as yet done nothing wonderful and in a few cases has done harm. In localized tuberculosis elsewhere than in the lungs, in chronic, stationary or retrocedent cases, great improvement is sometimes caused. He quotes from Raw, Latham and particularly from the early work of Doctors Patterson and Inman at Frimley in regard to auto-inoculation whereby the tuberculous patient by means of graduated labor auto-inoculates himself by his own tuberculin. The article on the whole is a careful and conservative summary of the work done up to date. [J. B. H.]

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT. NO. 39. SEPT. 24, 1908.

1. *HOCHHAUS, H. *Brain Affections with Fatal Termination without Anatomical Finding.*
2. *BARDENHEUER. *The Operative Treatment of Traumatic Subcutaneous Pressure Paralyses.*
3. ASCHAFFENBURG, G. *Artificial Auditory Illusions in Delirium Tremens.*
4. SIEGERT, F. *The Cutaneous Tuberculin Reaction (of V. Pirquet) during the First Half Year of Life.*
5. HOPMANN. *The Value of the Tactile Sense in Operating.*
6. *LIEBERMEISTER, G. *The Normal and Pathological Physiology of the Respiratory Organs.*
7. WALTER, J. *Vocal Fremitus in Croupous Pneumonia.*
8. SCHRECKER. *The Technic of Extension Treatment.*
9. RIBBERT, H. *The Origin of Cirrhosis of the Liver.*
10. WESTPHAL, A. *The Treatment of Convulsions.*

1. Hochhaus reports several cases, some of which suggest brain abscess, others hemorrhage into the brain, and others compression of the brain. In none of these cases were there found at autopsy anything except sclerosis of the vessels, and in several of them no especial sclerosis was found. He warns against too hasty surgical interference in brain cases even with apparently positive symptoms.

2. Nerve paralysis may be caused by sudden sharp pinching or stretching or by prolonged gradual stretching. The lesions to the nerve vary in these cases and the time it takes for recovery also varies. This author makes the following rule in regard to the time for surgical intervention. If after two to three weeks there is complete paralysis and there has been no improvement with electricity, and the muscles are beginning to show the reaction of degeneration, then cut down on the nerve and, after incising the sheath to release the pressure, suture the nerve if necessary.

6. Liebermeister reviews briefly some of the physiology dealing with the respiratory organs, especially as to the amount of residual air. He then considers this point during disease, especially in cases of laryngeal stenosis. By studying the position of the diaphragm by percussion and by x-ray in cases of diphtheria with laryngeal stenosis he found quite typical changes in the position of the diaphragm, for all kinds of expiratory or inspiratory dyspnea or both lead to an increase in the residual air in the lungs. This increase is manifest both by the x-ray and percussion by a lowering of the diaphragm. As the amount of retraction may vary considerably in different individuals, dependent upon the rigidity of the bony framework, the strength of the child and the strength of contraction of the diaphragm, he considers that the position of the diaphragm is a much better guide as to the need of intubation.

This ballooning of the lung comes on suddenly and will disappear as suddenly if the obstruction is removed. It occurs with any hindrance to both lungs, whether it be high up or low down in the air tubes. If this ballooning is not relieved within about a week emphysema results. His observations have been entirely on children and he gives also the reports on his cases. [C. F., JR.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT. NO. 39. SEPT. 29, 1908.

1. *MORO, E. I. *Clinical Hypersensitiveness, Tuberculin Reaction and the Nervous System.*
2. ROMBERG *The Modern Method for Inducing Diuresis*
3. HOSEMANN. *Is the Müller Procedure with Millon's Reagent Suitable for the Differentiation of Acute and Tubercular Suppuration?*
4. CHRISTIAN, M., AND ROSENBLAT, S. *Researches on Tuberculous Antibodies and Immunity.*
5. VOGT, H. *Contribution to the Diagnostic Separation of Certain Forms of Idiocy.*
6. VOGEL, H. *The Occurrence and Significance of Unilateral Elevations of Temperature in Disease of the Lungs.*
7. BÜRKER, K. *A Simple Comparative Spectroscope.*
8. HORNUNG, O. *Contribution to the Intravenous and Subcutaneous Employment of Cardiac Drugs.*
9. LENZ. *The Gangrenous Ulcer of the Lower Extremity among East African Natives.*
10. ZIELER, K. *Remarks on Wolff-Eisner's Article, "The New Explanation of Tuberculin Action."* (*Münchener Medizinische Wochenschrift, No. 35.*)

1. Moro has found, in performing the percutaneous reaction for tuberculosis, that in certain cases the reaction appears bilaterally; also that in other instances the reaction appears at point of inoculation and also at a distant point, not symmetrically, however; in one case there appeared a girdle-formed reaction. The author explains these observations by considering the percutaneous reaction as a vasomotor phenomenon resulting from a great irritation of the vasomotor tracts by the tuberculin, or, as he says, an "angioneurotic inflammation" in the manner of the delayed reflex of Kreibich. He believes that this is brought about by a specific irritability of the nervous system to tuberculin, in the tuberculous. [R. D.]

BERLINER KLINISCHE WOCHENSCHRIFT. NO. 38. SEPT. 21, 1908.

1. KRAUS, F., AND FRIEDENTHAL, H. *The Action of Thyroid Substances.*

2. *Friedburger, E. *The Treatment of Experimental Nagana with Mixtures of Atoxyl and Thioglycolic Acid.*
3. *Hoehne, F. *The Behavior of the Serum of Scarlet Fever Patients in the Wassermann Reaction for Syphilis.*
4. Seligmann, E., and Klopstock, F. *Serum Reactions in Scarlet Fever Patients.*
5. Erlandsen, A. *The Diagnostic Application of Local Tuberculin Reactions.*
6. Panichi, L. *Observations on Tremor. (Preliminary Communication.)*
7. *Schley. *The Significance of Diseases of the Optic Nerve in the Early Stage of Multiple Sclerosis.*
8. Bleibtren, L. *A Contribution to the Knowledge of the Origin of Diabetes Mellitus.*
9. Kiesevitzky, G. *A Case of Perforation of an Aortic Aneurysm into the Superior Vena Cava.*
10. Herz, M. *The Treatment of General Diseases with Streams of Air.*
11. Hess, E. *Idiosyncrasies.*

2. Experimentally atoxyl does not kill trypanosomes, except by the addition of some reducing agent, best, thioglycolic acid; and a combination of these two substances increases in its trypanicidic action on standing. The authors recommend further study on the action of this combination in diseases of man caused by trypanosomes.

3. After a very large number of observations the author finds no fixation of the complement in the serum of scarlet fever patients, thus disagreeing with the reports of Much and Eichelberg, who found 40% positive reactions in such cases.

7. The author shows that in multiple sclerosis affection of the optic nerve may be the earliest symptom. All sorts of disturbances of vision may take place, with differing ophthalmoscopic findings. The differential diagnosis usually lies between lead poisoning or brain tumor.

[R. D.]

No. 39. Sept. 28, 1908.

1. *Katzenstein, M. *The Protection of the Stomach against Autodigestion, with a Suggestion for the Treatment of Gastric Ulcer.*
2. Bruns, L. *The Question of the Idiopathic Form of Meningitis Spinalis Scrosa Circumscripta.*
3. *Caro, L. *Blood Findings in Basedow's Disease and in Thyroidism.*
4. Bolten, G. C. *Ascending Neuritis.*
5. Lesser, F. *Tabes and General Paralysis in the Light of the Recent Investigation of Syphilis.*
6. Nowak, J., and Gütig, C. *Nitrite Poisoning from Bismuth Subnitrate.*
7. Hempel, N. *KI in the Treatment of Suppuration of the Nasal Accessory Sinuses.*
8. Hornung. *Contributions to the Question of Acute Dilatation of the Heart.*
9. Lajeune, A. *Experiences with the Moro Reaction.*
10. Hanauer, W. *The Endowment of Hospitals for Mothers and Infants.*
11. Marx, H. *Ovulation and Pregnancy in their Significance for Legal Psychiatry.*

1. The author has sewed living tissue (i. e., gut or spleen) into the stomachs of dogs, which in longer or shorter periods were digested, showing that living cells as such cannot resist the digestive action of the gastric juice. Other experiments showed that tissue which was concerned with the production of gastric juice resisted digestion. In a further set of experiments it was found that the gastric mucosa contains a substance which stands off the action of pepsin—HCl. That the cause of gastric ulcer is the digestion of dead or weakened tissue of the stomach, the author believes. In the treatment he has found antipepsin to give remarkable results.

3. Caro found in 32 cases of Basedow's disease a marked reduction in the per cent of polymorphonucleur leucocytes, with an increase in the mononuclear cells. The same is true in cases of thyroidism, and also in normal cases fed on thyroid extract. The author considers, therefore, that this blood finding should be an important diagnostic point. [R. D.]

Obituary.

HENRY DENTON NICHOLL, M.D.

Dr. Henry Denton Nicholl, of New York, died at his country residence in Linden, New Windsor on the Hudson, on Oct. 26. He was born at New Windsor in 1844 and was graduated from the College of Physicians and Surgeons, New York, in 1866, after which he spent some time in study abroad. He was a pupil of the late Dr. J. Marion Sims, and after his return to America became associated with the latter in practice. Dr. Nicholl soon became known as one of the leading gynecologists of New York, and throughout his professional career was closely identified with the Woman's Hospital, where so much of the great work of Sims, Emmet, Thomas and Peaslee was accomplished. He was for many years an attending surgeon to that institution and eventually became president of its medical board. He was also almost equally long associated with the medical administration of the Nursery and Child's Hospital. At the time of his death he was consulting surgeon to the Woman's Hospital, consulting physician to the Nursery and Child's Hospital, consulting obstetrician to the Lincoln Hospital and consulting gynecologist to the Presbyterian Hospital and the Home for Incurables. Dr. Nicholl was prominent as well in religious circles and was a man of the most sterling character. At the same time he had a most engaging personality and was widely popular both in the profession and in society. He married Miss Anna Bancker, of Philadelphia, a sister of Dr. Charles N. Bancker, Carnac lecturer on medicine and instructor in medicine and physical diagnosis in the medical department of Cornell University, and she with two sons and a daughter survive him.

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Miscellany.

MEDICAL STATISTICS OF JAPANESE ARMY.

Major Charles E. Woodruff, of the Medical Corps of the Army, who is now stationed at Fort Wadsworth, New York Harbor, is authority for the assertion that the reports as to the phenomenal reduction of sickness in the Japanese army during the Manchurian campaign, as compared with all previous wars, which have been generally accepted in this country, are entirely without foundation in fact. In a statement recently made by him, he quotes the director-general of the Japanese Army Medical Service as giving the number of men sick enough to go to hospital as 236,223. This, he says, means that they were very sick, for it excludes all "trivial" cases treated by the surgeons. In comparing this with our own statistics it must be remembered that the American army surgeons are compelled to report every case excused from the least part of military duty, if it is only for a toothache, and that many are admitted to hospital simply for a day as a matter of military discipline. As the trivial cases far outnumber the typhoids and pneumonias, it can readily be seen that the report of 236,223 serious cases. 27,158 of them infectious, shows an enormous amount of sickness; even among the home troops there were 97,850 serious cases admitted to hospital. Moreover, it was stated that one fourth were beriberi, a preventable infection, which bears the same relation to the Japanese as typhoid does to our soldiers. Major Woodruff goes on to say that the number of Japanese deaths by disease has never been divulged, and that all the amazing discussions on the subject are based on assumptions. We can only estimate the number. It is said that there were 47,387 killed in battle, and that of 173,425 wounded, only 11,500 died of their wounds — a total of 58,887 violent deaths. Then it is stated that the deaths by disease were 37% of this number, 21,788, or 1,037 per month of hostilities. Our medical military attaché reports that the percentage was really 46, not 37, which would bring the monthly deaths to 1,290, and we do not know whether it includes the deaths at the home camps. We can also well doubt that only 11,500 died of wounds, for these cases generally approximate the number killed outright, and, therefore, the monthly death-roll will be much larger than 1,290. Of the 274,717 men in the American army in 1898, 2,565 died of disease during the five months of hostilities, or 513 per month, which is probably not far from the Japanese rate. The figures show what every one knows, that our camps were dreadful; but they also show that a certain amount of disease is inevitable in war, as camps are huge cities without protected water supplies or sewage. It has been stated seriously that as our deaths by disease were 8 (not 14) times those by bullets, and the Japanese deaths by disease were only one third those by bullets, therefore we had proportionately 24 times the death-rate they had. It does not speak well for the intelligence of American readers that scarcely one realized that men are not killed by bullets unless they are shot at. In our Spanish War less than 11% of the men ever saw a battle; so that it is no wonder that the deaths by wounds were only one eighth those by disease. In the Manchurian campaign, according to Surgeon-General Suzuki, there were 21 great battles and 50 smaller engagements. It may be estimated that on an average each soldier had ten, perhaps twenty, opportunities to be shot. Moreover, it was one of the bloodiest wars of modern times, for in their twenty-one months they had 47,387 killed outright, while in our Civil War of four years, with twice as many men engaged, there were 44,238. As far as we know, the percentage of Japanese deaths by wounds was higher than in any modern war, and that changed the relative proportion of deaths by wounds and disease. If there had been as good sanitation as claimed, the number of casualities would be much more than three times the deaths by disease. On the contrary, our military attachés reported that there was marked neglect of even the commonest laws of hygiene. Things were done which we would not tolerate, and the number of typhoids and dysenteries was deplorable. The beriberi was a disgrace, for the navy had eliminated the disease, but the army surgeons refused to be guided by the naval sanitarians, with the resulting beriberi telltale of 25% of all "serious" cases. Some say that it was 50%, and that 16% of the army had it. At that rate we would have had 40,000 cases of typhoid in 1898, and twice as many deaths as really occurred. In view of the fact that much of the Spanish War sickness was directly traceable to tropical climates, and the further facts that the Japanese campaigned in a northern climate to which they were suited, and that troops in campaigns are always healthier than those in camp, their record is deplorably bad, for if they had had good sanitation they should have had only one tenth the deaths they have acknowledged.

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PUBLIC HEALTH AND HOSPITAL EXHIBITS.

THE authorities of the United States government propose to do much toward educating the public, by showing modern appliances and methods of treatment and illustrating the value of sanitary laws and practical hygiene at the Alaska-Yukon-Pacific Exposition, which will be held in Seattle in 1909. One of the features of the exhibit of the Treasury Department in the Government Building will be that of the Public Health and Marine-Hospital Service. The exhibit will be arranged for giving the greatest amount of information in the simplest and most thorough manner. Demonstrations of great value for the layman's knowledge will be held. In its report to the officers of the exposition, the department outlines its exhibits as follows:

"The Surgical Section will consist of a model operating room, having in the center wax figures showing a surgical operation in progress. Around the side of the room will be placed steam sterilizers for dressings, water sterilizers, irrigating stands, an instrument case containing a full surgical armamentarium, glass topped bottles, glass basins and all the other appurtenances of a fully equipped operating room.

"The Laboratory Section is to contain various apparatus constantly used in the hygienic laboratory in the solution of public health problems. This includes laboratory glassware, sterilizers, thermostats, embedding apparatus, microscopes, microphotographic apparatus, etc. Petri dishes containing cultures of bacteria isolated from contaminated vaccine virus will be shown. A traveling laboratory is included in this section, two such outfits being constantly held in readiness by the service for field work or for use in the event of outbreaks of epidemic diseases in various parts of the country. In addition there is to be a very complete helminthological collection. This collection is of great value in view of the increasing attention given to parasites in relation to diseases of man. A macrograph is used to enlarge microphotographs of various pathogenic bacteria, animal parasites and other specimens related to disease.

"The Hospital Section will comprise a record room and model ward. The record room contains various service publications, a hospital library, clinical histories with their method of filing, and filing cases for microscopic slides. The model ward is equipped with modern hospital beds, invalid chairs, bedside stands, a wheeled stretcher, litters, a portable bath tub and stretcher, medicine cases, a case of surgical dressings, etc.

"The Tuberculosis Exhibit is to consist of a model of the Marine-Hospital Sanatorium, located at Fort Stanton, N. Mex. This, together with views of the buildings and surrounding country, are shown to emphasize the advantage of light and air in the treatment of tuberculosis.

"The Quarantine Section includes a model of a detention camp intended for use in time of epidemic; also models of the quarantine stations at Delaware Breakwater and Reedy Island, and a model of disinfecting machinery used at the latter station.

"The X-Ray Section will be installed in a room constructed for the purpose. Two modern coils are to be shown, including x-ray tubes and fluoroscopes; also a high-frequency apparatus and the various accessories which naturally form a part of such an exhibit. In addition, there are to be shown numerous photographs to illustrate the uses to which this apparatus is used at the different hospitals of the service."

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ARMY MEDICAL CORPS EXAMINATIONS.

The surgeon-general of the army announces that the first of the preliminary examinations for the appointment of first lieutenants in the Army Medical Corps for the year 1909 will be held on Jan. 11, 1909, at points to be herafter designated.

Full information concerning the examination can be procured upon application to the "Surgeon-General, United States Army, Washington, D. C." The essential requirements to securing an invitation are that the applicant shall be a citizen of the United States, shall be between twenty-two and thirty years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, shall be of good moral character and habits and shall have had at least one year's hospital training or its equivalent in practice.

The examination in subjects of general education (mathematics, geography, history, general literature and Latin) may be omitted in the case of applicants holding diplomas from reputable literary or scientific colleges, normal schools or high schools, or graduates of medical schools which require an entrance examination satisfactory to the faculty of the Army Medical School.

In order to perfect all necessary arrangements for the examination, applications must be complete and in possession of the adjutant-general on or before Dec. 10, 1908. There are at present fifty-seven vacancies in the Medical Corps of the army.

CITY HOSPITAL ACCOMMODATIONS.

The following interesting statement is taken from an address by Mr. Shuman, president of the Board of Trustees of the Boston City Hospital, delivered at the recent opening of the new East Boston Relief Station of that hospital:

"It is interesting in studying hospital matters to discover what other cities are doing in the way of hospital accommodation. A circular letter was addressed to sixteen cities in this commonwealth and other states, as follows: Fitchburg, Cambridge, Malden, Haverhill, New York, Philadelphia, Worcester, Springfield, Concord, N. H.; Pittsfield, New Bedford, Newburyport, Chicopee, Northampton, Marlboro and Baltimore, and it was found that in only two cities in this state, Worcester and Haverhill, was there a municipal hospital supported wholly or in part by an appropriation from the city council. In other cities the hospitals are private corporations, and although the city may pay a certain amount for the care of patients, they have no hospital directly under a board of trustees appointed by the mayor of the city. While New York and Philadelphia have municipal hospitals, they have no relief stations supported by the city; in fact, no such thing as a relief station similar to the Haymarket Square Relief Station or the East Boston Relief Station is found in any other city. Even Baltimore, remarkable for its hospital accommodations, has nothing of the sort."

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ALVARENGA PRIZE OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Dr. Thomas R. Neilson, secretary of the College of Physicians of Philadelphia, announces that the next award of the Alvarenga prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about one hundred and eighty dollars, will be made on July 14, 1909, provided that an essay deemed by the Committee of Award to be worthy of the prize shall have been offered.

Essays intended for competition may be upon any subject in medicine, but cannot have been published. They must be typewritten and must be received by the secretary of the college on or before May 1, 1909.

Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author.

It is a condition of competition that the successful essay or a copy of it shall remain in possession of the college; other essays will be returned upon application within three months after the award.

The Alvarenga Prize for 1908 has been awarded to Dr. William T. Shoemaker, of Philadelphia, for his essay entitled "Retinitis Pigmentosa, with an Analysis of Seventeen Cases occurring in Deaf Mutes, including Laboratory Examinations of the Blood and Urine in Eleven Cases."

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, OCT. 24, 1908.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	—	—
Chicago	510	154	Waltham	7	1
Philadelphia	—	—	Pittsfield	—	—
St. Louis	—	—	Gloucester	8	5
Baltimore	166	41	Brookline	6	1
Cleveland	—	—	North Adams	3	2
Buffalo	—	—	Chicopee	3	1
Pittsburg	—	—	Northampton	8	0
Cincinnati	—	—	Medford	3	—
Milwaukee	—	—	Beverly	1	1
Washington	—	—	Leominster	10	2
Providence	—	—	Hyde Park	4	0
Boston	187	64	Melrose	6	0
Worcester	33	6	Newburyport	—	—
Fall River	36	17	Woburn	3	—
Cambridge	23	12	Westfield	6	1
Lowell	29	8	Marlboro	1	1
Lynn	20	5	Revere	1	—
New Bedford	24	10	Attleboro	4	0
Springfield	14	5	Peabody	—	—
Lawrence	18	4	Adams	2	1
Somerville	16	9	Clinton	5	0
Brockton	10	1	Gardner	5	5
Holyoke	20	7	Milford	2	1
Malden	16	4	Watertown	0	—
Chelsea	5	2	Plymouth	—	—
Newton	4	—	Weymouth	3	1
Salem	8	2	Framingham	2	—
Haverhill	15	1	Southbridge	3	2
Fitchburg	12	4	Wakefield	—	—
Everett	6	4	Webster	—	—
Taunton	6	1	Arlington	0	—

LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND OTHER OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED OCT. 21, 1908.

CARMICHAEL, D. A., surgeon. Granted eighteen days' leave of absence from Nov. 16, 1908.

STONER, J. B., surgeon. Granted five days' leave of absence from Oct. 19, 1908.

YOUNG, G. B., surgeon. Directed to proceed to Port Huron, Mich., and Milwaukee, Wis., upon special temporary duty.

COFER, L. E., passed assistant surgeon. Relieved from duty in Hawaiian Islands and directed to proceed to Washington, D. C., for further orders.

GRUBBS, S. B., passed assistant surgeon. Directed to proceed to St. Petersburg, Russia; Berlin, Germany, and Libau, Russia, upon special temporary duty. Sept. 4, 1908. Detailed to represent the Service at the meeting of the International Committee at Paris, Nov. 4, 1908.

WHITE, M. J., passed assistant surgeon. Granted seven days' leave of absence from Oct. 16, 1908.

HEISER, V. G., passed assistant surgeon. Detailed to represent the Service at the meeting of the Southern Medical Association at Atlanta, Ga., Nov. 10–12, 1908.

BILLINGS, W. C., passed assistant surgeon. Relieved from duty at Vancouver, British Columbia, and directed to proceed to Washington, D. C., for further orders.

BLANCHARD, J. F., acting assistant surgeon. Granted two days' leave of absence from Oct. 22, 1908.

LYALL, ROBERT, acting assistant surgeon. Granted twelve days' extension of leave of absence, without pay, from Oct. 5, 1908.

RODMAN, J. C., acting assistant surgeon. Granted ten days' leave of absence from Oct. 15, 1908.

TAPPAN, J. W., acting assistant surgeon. Directed to proceed to Eagle Pass, Laredo and Brownsville, Tex., and Naco, Douglass and Nogales, Ariz., upon special temporary duty.

VILLOLDO, PEDRO, acting assistant surgeon. Granted thirty days' leave of absence from Oct. 20, 1908.

ROGERS, EDWARD, pharmacist. Granted seven days' leave of absence from Oct. 14, 1908, under paragraph 210, Service Regulations.

STIER, CARL, pharmacist. Granted one month's leave of absence from Nov. 8, 1908.

APPOINTMENT.

JOHN K. THOMPSON appointed a pharmacist of the third class, Oct. 19, 1908.

BOARDS CONVENED.

Board of medical officers convened to meet at the Marine Hospital, Baltimore, Md., Oct. 17, 1908, for the purpose of making a physical examination of cadets of the Revenue-Cutter Service. Surgeon L. L. Williams, chairman; Passed Assistant Surgeon J. T. Burkhalter, recorder.

Board of medical officers convened to meet at the Marine Hospital, New Orleans, La., upon the call of the chairman, for the purpose of re-examining a candidate for a position in the Life-Saving Service. Surgeon J. H. White, chairman; Passed Assistant Surgeon H. W. Wickes, recorder.

Board of medical officers convened to meet at the Marine Hospital, Baltimore, Md., Oct. 26, 1908, for the purpose of making a physical examination of cadet engineers of the Revenue-Cutter Service for promotion. Surgeon L. L. Williams, chairman; Passed Assistant Surgeon J. T. Burkhalter, recorder.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING OCT. 31, 1908.

C. B. MUNGER, assistant surgeon. Detached from the "Maine" and ordered to the Naval Hospital, Portsmouth, N. H. Oct. 27.

A. M. D. MCCORMICK, surgeon. Detached from the Naval Recruiting Station, Baltimore, Md., and ordered to the "Maine" as Fleet Surgeon of the Third Squadron, Atlantic Fleet. Oct. 28.

M. S. ELLIOTT, surgeon. Detached from the "Maine" and ordered to the Naval Hospital, Washington, D. C. Oct. 28.

SOCIETY NOTICE.

HARVEY SOCIETY LECTURES. — The fourth course of Harvey Society Lectures, under the patronage of the New York Academy of Medicine, is as follows: 1908. Oct. 24: Prof. A. Calmette, Institut Pasteur de Lille, France, "Intestinal Infection and Immunity in Tuberculosis." Nov. 7: Prof. W. G. MacCallum, Johns Hopkins University, "Fever." Nov. 21: Prof. Graham Lusk, University and Bellevue Hospital Medical College, "Metabolism in Diabetes." Nov. 28: Dr. Willhelm Falta, University of Vienna, "Therapeutics of Diabetes." Dec. 5: Dr. M. J. Rosenau and Dr. John F. Anderson, U. S. Public Health and Marine-Hospital Service, "Anaphylaxis." Dec. 19: Prof. A. B. Macallum, University of Toronto, "Osmosis." 1909. Jan. 9: Prof. J. B. Leathes, The Lister Institute of Preventive Medicine, England, "The Relation of the Liver to the Metabolism of Fat." Feb. 6: Prof. Philip Hanson Hiss, Columbia University, "Some Problems in Immunity and the Treatment of Infectious Diseases." March 6: Prof. C. B. Davenport, Station for Experimental Evolution, Cold Spring Harbor, "Heredity in Man." These lectures will be given on Saturday evenings at 8.30, in the Academy of Medicine, 17 West 43d Street, New York.

RECENT DEATH.

JOHN HENRY JACKSON, M.D., M.M.S.S., died in Fall River, Oct. 28, 1908.

BOOKS AND PAMPHLETS RECEIVED.

Founder's Centenary Hymn in Honor of Ezra Cornell. 1807–Jan. 11, 1907. By Burt G. Wilder. Reprint.

Spectacles and Eyeglasses. Their Forms, Mounting and Proper Adjustment. By R. J. Phillips, M.D. Fourth edition, revised. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1908.

Venoms. Venomous Animals and Antivenomous Serum-Therapeutics. By A. Calmette, M.D. Translated by Ernest E. Austen, F.Z.S. Illustrated. New York: William Wood & Co. 1908.

Text Book of Nervous Diseases and Psychiatry. By Charles L. Dana, A.M., M.D., LL.D. Seventh edition. Illustrated. New York: William Wood & Co. 1908.

Operative Midwifery. By J. M. Munro Kerr, M.B., C.M. (Glas.) Illustrated. New York: William Wood & Co. 1908.

Green's Encyclopedia and Dictionary of Medicine and Surgery. Vol. IX. Edinburgh and London: William Green & Sons. 1908.

Russell Sage Foundation. The Campaign against Tuberculosis in the United States, including a Directory dealing with Tuberculosis in the United States and Canada. Compiled under the direction of the National Association for the Study and Prevention of Tuberculosis by Philip P. Jacobs. New York: Charities Publication Committee. 1908.

Original Articles.

CANCER OF THE STOMACH.*

BY CHRISTOPHER GRAHAM, B.S., M.D., ROCHESTER, MINN.

The fundamental factor in the etiology of cancer still eludes the careful investigator, is still a mystery. A fuller knowledge of the essence of life seems essential before we can read its inner pathology. However, with an army of enthusiastic and patient workers in the field, and with ever-increasing facilities, we should take courage. And, too, when we consider the yield of knowledge in other fields long resistant we are not without hope that in time this great mystery may also be solved and dread cancer will be a matter of history.

Much practical knowledge concerning cancer of the stomach has been gained from clinical and surgical methods, and much has been achieved through laboratory research. Some of the predisposing conditions are so clearly outlined that even now we can point out radical lines of treatment and may attack the disease in the precancerous state, thus circumventing the dread scourge and, through prevention, reach the heights of modern medicine.

Back in the late nineties we were impressed by the long precancerous histories of many of our patients. This precancerous history was that of ulcer and often covered a period of years (typically chronic ulcer), until finally malignancy developed, symptoms changed and signal danger approached. The percentage in long histories has not held so high of late as in earlier years, though it still averages about 50%. But what has better strengthened our position that ulcer is the great and fertile soil of cancer have been the pathological findings during the past four or five years. However satisfactory a long history may be, we have demonstrated that it is not necessary in order to establish the fact that ulcer precedes cancer. Indeed, some of our shortest histories have proven to be those where cancer has been implanted on a previously non-malignant ulcer base. Proof of this fact is obvious. We know that ulcers are often latent for years and are first recognized when bleeding, perforation, obstruction or cancerous degeneration becomes manifest. When cancer attacks one of these latent ulcers, great inroads may be made before symptoms other than the loss of flesh and strength are felt. Sudden obstruction from new growths and paralysis of the stomach wall may develop, motor power disappear, rapid loss of flesh follow and death result within a few weeks. These cases have but a short manifest history, but the real condition remains the same and the precancerous soil may have existed months or years.

In all the partial resections of the stomach made for cancer and microscopically examined during the years 1906–7, and until June, 1908, in St. Mary's Hospital, we have been able to demonstrate a precancerous or non-malignant ulcer state in 62% of the cases. Some of these have long, some short, histories. Among the long histories some can, others cannot, be demonstrated positively as cancer on ulcer, but the period of complaint argues against cancer being present during the whole term of illness.

Before passing to the general symptoms referable to the stomach, I desire to point out and to emphasize the diagnostic significance of the picture of carcinoma of the stomach as seen in the facies of such patients. The face of a patient suffering from cancer of the stomach has certain morbid characteristics. Pallor is often most noticeable about the eyes, nose and mouth. Wasting, too, shows here, giving a pinched, wrinkled look. The expression is one of stolidity; there is intense conviction of impending danger, and while the patient is intent, as though eager, to read your opinion, the expression is not so much pained as hopeless, calm and dejected. One may often diagnose cancer of the stomach with reasonable certainty by a glance at the face of the sufferer.

When cancer has once fastened itself upon the stomach, the course is, as a rule, steadily and surely downward, with rare intervals of freedom from its ravages. The patient loses weight and strength more rapidly than is consistent with lessened appetite; a weakness, loss of desire to do active work, and a feeling of weariness control. Anemia usually develops rapidly. There is a dull, sickening, indescribable pain; or perhaps only a strange distress which is not always closely related to food, is often continuous, and with it a mental depression and consciousness of pending evil. This mental attitude seems to be the special factor which gives to the facies that expression which marks the sufferer with malignant trouble and points out the diagnosis. This factor, coupled with languor and emaciation, leaves but few other diseases to be considered.

In eliciting the history of gastric cancer we find three types. First, those with a long series of repeated attacks which are clearly those of ulcer, the so-called "precancerous state." This is the typical chronic ulcer period. Second, those in which the initial symptoms were more or less severe, but where months or years of quiet intervened before the malignant symptoms appeared. Third, those in which the acute symptoms suddenly attack the patient in the midst of apparent perfect health.

In the first and second types the precancerous history is that of ulcer; that the precursor in the third type is very often ulcer is being determined through surgery and skillful pathological technic. In this latter group it is more than probable that the early history has been overlooked, or, because of the present increased distress, the patient thinks that the earlier disturbance is not worth considering. From conclusions based on the many histories taken at our clinic, we would distinguish four stages in gastric ulcer development and would expect cancer when it did develop to appear in the third or fourth stage, or often to be the fourth.

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* Read Aug. 5, 1908, at the centennial meeting of the Cortland County Medical Society at Homer, N. Y.

In the first stage of ulcer there is an unusually good appetite, with nutrition at par or even excessive; pain two to five hours after meals, when the stomach is empty or emptying itself; the heartier the meal, the longer and more complete is the sense of stomach satisfaction (overactive digestion); perhaps some gas and sour eructations; occasional vomiting of small amounts of sour, bitter liquid; excess of hydrochloric acid; stomach normal as to position and size. These patients present themselves to be relieved of pain, which they say comes on after meals, but which in reality is pre-meal pain.

The second stage, we may say, begins some months later, following several intermissions with recurrences, each recurrence increasing more or less in severity. The appetite is good, though perhaps not above normal; less satisfaction follows the hearty meal, pain is severe and comes sooner after taking food. Distress or discomfort may be present even when so-called "pain" is absent; gas is usually complained of; sour eructations are common; vomiting of sour, bitter, acrid fluid at times mixed with food is frequent. A sense of relief follows vomiting for a greater or less period. Loss of flesh is noted during the attack either from voluntary or prescribed dieting, though rapid gain takes place during the intermissions. There is perhaps some dilatation, and acidity is high or normal. During the third stage a desire for food may remain; the desire may be fair or decreasing, but the patient will be afraid to eat because of the distress — pain, gas, vomiting, sour eructations, bloating or sour burning stomach — which may follow. There will be but a short period of food relief. Obstructive symptoms, loss of flesh and even cachexia may be present. Constipation, marked in all stages, is usually obstinate here. The stomach may be dilated and prolapsed, hydrochloric acid normal, lessened, or even absent. Blood may be found during any stage at a test meal, but more frequently during this stage than previously because, other conditions being equal, the chemical and mechanical powers of the stomach are such that blood destruction (digestion) is retarded.

It is extremely difficult to mark the distinctive period of the transition of the third stage, which is ulcer, into the fourth stage, which may be cancer, so imperceptibly does the change take place.

Some patients are weak, emaciated and even cachectic, with ulcer the only lesion, (1) if the motor power of the stomach be greatly interfered with, or (2) if the lesion is large and the destruction great even in the presence of mild obstruction. Here a transition may begin, and although all possible diagnostic means and precautions are taken, a differentiation cannot always be made before widespread degeneration removes all hope of cure. But when the clinician is awakened to his important task, he will at least reach the point of honest suspicion and call surgery to his aid. Many times one does find symptoms that offer a basis for differentiation. Pyrosis increases in amount, but is less acute; or rather, not a pyrosis, but an irregular regurgitation of a less acid fluid. As in ulcer, on stooping, or during the night, fluid which has more or less acidity pours from the stomach and may awaken the patient. This regurgitation is more copious, but usually much less acid, than in ulcer. Gas and bloating with a distended discomfort increase. Nausea and vomiting are more often excited by liquid food. Appetite may persist quite to the end, but as a rule it gradually lessens until finally the patient may turn from food with distaste. Nervousness and languor are combined; weakness and faintness creep on; the patient's ability to exert himself decreases rapidly; anemia may come speedily and the flesh waste decidedly. A languid air, a paleness about the eyes, nose and mouth, associated with a pinched expression (atoxemic look), are common. All these conditions point directly to a transition. The character of the pain changes; it is dull, sickening, more wearing, more continuous and not so regular in the recurrence of severer pain. The severer attacks come at unexpected times, sooner after food, as a rule, and are not so acute. There is more relief from eructations of gas and vomiting because the depression is deeper. The pain is more diffuse and not so often eased by pressure or position.

Localization of pain, though not always definite in ulcer, is much less so in cancer. As in ulcer, if perforation has taken place, there may be a wide field of radiation, otherwise the epigastrium is the seat of pain. As cancer progresses, diffuseness of pain increases. The diagnosis must, however, be made in the absence of pain. Tenderness is also frequently absent.

Vomiting, always a prominent symptom, usually intensifies as malignancy creeps on. It becomes more irregular, longer between attacks, and is more copious unless there be contraction from diffuse infiltration. The vomitus is rancid, often acid and obnoxious, foul. All of these symptoms vary in intensity according to obstruction and destruction, but the chief characteristic of cancer vomiting is that food taken into the stomach several hours or even days before, returns poorly macerated and with undigested masses in it, and this even when pyloric obstruction is not marked (cancer paralysis).

Vomiting is, as a rule, accompanied with less retching in cancer than in ulcer; blood is more frequently seen, while bile is a rarer accompaniment. If there has been a long period between the ulcer symptoms and the recent cancerous change (Type 2), the diagnosis is usually easier because of the constancy, the rapid approach and marked character of the symptoms. There may be a short but persistent period of flatulency, bloating, lessened appetite and loss of flesh; then, as is so often marked in Type 3, the sudden burst of malignancy that clinicians say attacks the patient in the height of good health. In these two types we most often find tumor, and in many other respects they are so similar that we should be led to consider them counterparts, the early symptoms in the one being overlooked or forgotten by the otherwise healthy individual. Motor power lessens rapidly as cancer progresses, and if the pyloric obstruction is acute and the other symptoms intense, dilatation advances rapidly. Organic acids increase, hydrochloric acid decreases and blood is more often and more easily detected. Finally, it is the composite pathological picture that the patient presents at the clinic quite as often as the symptoms he urges upon you that fixes the period when the benign has yielded to the malignant condition.

When we reach the undoubted fourth stage (cancerous), the whole picture intensifies. The appetite is poor or absent; even the smell of food may be repulsive. Meats and fats are especially avoided. Emaciation follows rapidly, often faster than can be accounted for by loss of appetite (toxic or perhaps food delay). Strength fails rapidly, languor is intense and the patient exerts himself with difficulty. The anemic-cachectic condition develops more and more clearly; the body becomes emaciated, the skin dry, wrinkled, and at times lemon-yellow. Pain increases and is more constant, boring and undermining; it is less acute, but more sickening. Food, if tolerated at all, almost immediately increases the pain. There is frequent vomiting of quantities of poorly macerated and undigested food, rancid and offensive, and of coffee-ground color. Blood is more constant and more easily detected because of the further decreased or absent motor power; sour stomach, eructations and gas become distressing. Obstinate constipation, mental depression, extreme languor, cachexia, prolapse, dilatation, tumor, lactic acid fermentation, absence of hydrochloric acid — when these conditions prevail, the diagnosis can scarcely remain doubtful.

The picture of cancer where no obtainable precancerous symptoms are elicited, or where a long period has elapsed since symptoms are recalled, is closely that of the latest stage of those with long-preceding ulcer history, except there is usually less acute pain, or none; tenderness more often absent, tumor oftener present, depression and weariness more marked and the general downward course more violent. These are the cases of whom you say, when they enter the office, "This is cancer of the stomach, and tumor will be found." Here one must be prepared to make a diagnosis in the presence of few symptoms, the facies and the general pathological picture presented by the patient bearing out the meager clinical findings.

Differential diagnosis. — This is a broad and difficult field to cover, and too often we find that we are not within the limits of precision. I shall consider but two small groups of diseases, one non-surgical and the other surgical.

(I) Of the non-surgical diseases, syphilis, tuberculosis, Bright's disease and pernicious anemia only will be briefly discussed. Syphilis, when it attacks the liver or stomach, may closely simulate ulcer or gallstones, and when quite advanced, the pain, cachexia and vomiting may lead to a strong suspicion of cancer of the stomach. The history of specific infection, the sudden attacks of pain and vomiting (crises), their almost abrupt cessation after a more or less prolonged period, together with shooting pains of a general character, cause the diagnostician to hesitate. Anti-syphilitic treatment often aids to clear up the diagnosis.

Many patients with tuberculosis will present themselves with a diagnosis of stomach trouble, not a few of them fearing cancer. Anorexia, food pain, vomiting, emaciation, cachexia are present; hydrochloric acid may be absent. A careful examination reveals irregular fever, cough, bacilli, lung complications or other tubercular foci, and the clinician should not remain long in doubt concerning the correct diagnosis.

Bright's disease will often confuse the physician. Loss of appetite, emaciation, anemia, vomiting and stomach analysis will closely follow the cancer type of stomach trouble. Repeated examinations of the urine may be necessary; history of increased frequency is often given. These, together with the condition of the heart and blood vessels, will usually clear up the diagnosis.

The most important condition, that is, the most important to differentiate, is that of pernicious anemia. Unless the blood findings are positive, one is often at a loss in deciding. There may be lack of appetite in both. Dyspeptic symptoms, but not the dislike for food, go with anemia; usually we do not find the pain and vomiting of cancer. In cancer and anemia there may be pain, shortness of breath and palpitation on exertion, but in anemia these symptoms are much more clearly defined. Rest gives perfect physical ease in anemia, while in cancer the stomach distress and general weakness do not yield completely to quiet. There is less emaciation in anemia, the skin is more apt to be lemon color than colorless, there is an oilier "feel" present and a slight edema is usually found. Stomach analyses in pernicious anemia are misleading, and if seriously considered, many mistaken diagnoses may be credited to them. Absence of hydrochloric acid and presence of blood are frequent conditions in both. The examination of the blood is invaluable. Poikilocytosis is common in anemia and infrequent in cancer. In anemia the hemaglobin is low, red count low, and color index high. In cancer, hemaglobin test is frequently high, due to dehydration of blood, and the color index is not above normal, usually low. Staining the blood and the discovery of the distinctive nucleated red cells of anemia will usually establish the diagnosis. The facial expression is of value. In anemia there is a general paleness and icteric tinge, not the excessive paleness about the eyes and nose. There is a slight puffiness of the tissues and a more hopeful expression; emaciation is less marked, and the wrinkled condition which in cancer adds so much to the picture of cachexia is wanting.

(II) The surgical conditions considered are (1) gall bladder disease with adhesions, infections, duct obstruction or pancreatitis; (2) large ulcers; (3) saddle ulcers; (4) hour-glass stomach; (5) pyloric ulcers with prolonged histories where obstruction, perforation or adhesions have developed.

Chronic gall bladder disease with complications certainly gives serious trouble in differentiation.

Late in the illness the stomach symptoms are so typical of grave ulcer or cancer that we are forced to serious consideration. Our hope of differentiation lies in the early history, where if the trouble be in the gall bladder, we find the typical history of sudden, severe, irregular epigastric attacks, with pain radiating to the right arch and to the back; upward pressure (bursting feel) spasm of the diaphragm; abrupt cessation after a longer or shorter attack. There is no relation to food; there may be jaundice. This early history will often clear up the diagnosis between ulcer and gallstones and lessen the chances of making the diagnosis of malignant stomach.

Often in the malignant list, or seriously so considered, are patients suffering from large ulcerous lesions. This is true when the destruction is great, loss of blood evident, anemia marked, food intake greatly reduced, emaciation pronounced and where there is vomiting of large amounts, perhaps coffee-ground in character.

This same picture prevails in many saddle ulcers, in hour-glass stomachs and among the long histories where at a late period obstruction, perforation, adhesions and deformities have developed. In any of these histories we may find anorexia, emaciation, hemorrhage by stomach (coffee ground) or bowel, vomiting, cachexia, absence of hydrochloric acid, presence of lactic acid, Oppler-Boas bacilli, with all the signs of motor insufficiency which is often so marked in cancer.

In cancer, loss of appetite comes early; loss of strength and flesh progresses rapidly and is too marked to be accounted for by time and lessened appetite. This loss of strength is often the first symptom complained of. In ulcer the appetite remains until late, and fear of pain is very often the cause of lessened food intake. Loss of flesh and strength is slow and well accounted for by the forced abstinence. Pain in cancer is more diffuse, more constant, not so closely related to food and is more depressing. Nausea and vomiting are more irregular and take place when no food is present. In ulcer the vomiting comes at the height of pain and is usually due to food. In cancer, vomiting of blood is more frequent, not so copious, and is often altered by detention in the stomach. Hydrochloric acid is often absent; Oppler-Boas bacilli and lactic acid present. A tumor is frequently palpable. One may almost surely diagnose cancer when a movable tumor of the stomach is demonstrated and which on expiration may be prevented from ascending.

The satisfaction that may follow an exact diagnosis does not justify us in prolonged observation. The chief factor to be considered is, what we owe the sufferer. All of this latter group of conditions is purely surgical, and a careful surgical diagnosis being made, we should urge our patients to accept this as reasonable and advise rational treatment. The surgeon who is up to the present-day technic may be trusted to find and correct the existing pathologic condition.

The treatment of carcinoma of the stomach is either palliative or radical, palliative only when the diagnosis is so delayed that hope of surgical aid is lost, or in case operation is refused. Surgery offers the only means of cure and should be advised in all cases when (1) the diagnosis is made early enough, (2) the location of the cancer makes the case an operable one, and (3) when the promise of relief or cure is likely to yield returns for the suffering, danger and expense to be borne by the patient. In no other disease is the responsibility of the medical attendant greater, and no measures should be left untried to secure an early, accurate diagnosis. It is sometimes said that the cures from operative procedure are so few in cancer of the stomach, the relief given so small and prolongation of life so little that we are not justified in putting our patients into the surgeon's hands. This may be true (1) if the cancer is diffuse or the distant glands infected, so that removal is beyond hope. This cannot always be absolutely determined before operation, so we must act on the possibility of doing something positive. (2) If the diagnosis is not made until tumor, cachexia and all positive symptoms appear, then we should know that the distant parts are invaded and the case beyond the surgeon's aid. (3) It is also quite as true that if we cannot turn our patients to a surgeon who has mastered present-day technic, that we might better leave them to palliative treatment. But there are scores of surgeons in this country to whom we may trust our patients with the utmost confidence that the right thing will be done despite any error that may have been made in the diagnosis. There are, on the other hand, scores and scores of men who have not learned in the proper school of experience, and to whom we should not turn even a simple case of appendicitis, " as soon as the diagnosis has been made." In the ranks of the latter is a great multitude of self-styled surgeons who are continually at war with the internist, criticising his methods, his failures in diagnosis and his hesitancy in turning over to the surgeon any cases he may have in charge. It is this class of " knockers " that is doing the most to delay the proper and close alliance between the progressive internist and the conservative surgeon.

We certainly have a problem before us. Not one for the medical man alone; not one for the surgeon only, but one that calls for the best combined efforts of surgeon and internist.

The problem is to evolve a method of *early diagnosis in cancer of the stomach,* so that the sufferer may be offered a chance of cure. The horizon is gradually widening. Good has come and is coming yet more rapidly through earlier diagnosis and competent surgery. The near future promises much. In cancer of the stomach the internist must concern himself with but one thing — early diagnosis. That which the surgeon must demand to-day, that which enters almost solely into his promise of cure, and that alone which places him beyond merely an operator, is accurate and early diagnosis. There is but one thing for which the patient should return real gratitude to his physician, and that is for an early diagnosis.

When a definite diagnosis or a strong suspicion of cancer exists, there is known to-day but one line of treatment to follow or advise. Surgery alone offers hope of amelioration or cure. It is our imperative duty as internists and surgeons to see that the patient gets the best that is available in diagnosis as well as techinc.

STATISTICS GATHERED AND COMPILED BY DR. DONALD GUTHRIE.

There have been 191 resections for cancer of the stomach in St. Mary's Hospital, Rochester, Minn. Twenty of these resections have been made since the beginning of 1908 and are excluded as valueless in the way of statistics. The cases previous to 1903 are not included because of want of sufficient data concerning them. One patient in this early series is known to have lived four years, and one is alive and well to-day, a period of ten years.

From 1903 to 1908, there were 126 cases. Number of males, 88. Number of females, 38. Average age of male and female, 51. Average age of males, 52. Average age of females, 49. Age of patients under 30, 4. Age of patients over 70, 6. The ages of the remaining 116 ranged from 30 to 70 years.

Number deceased, 78, or 61%. Number living, 42, or 33.5%. Questionable, 6.

Number that lived less than 6 mouths,	14
,, ,, ,, ,, ,, 1 year,	14
,, ,, ,, ,, ,, $\frac{1}{2}$,,	16
,, ,, ,, ,, ,, $\frac{2}{3}$,,	10
,, ,, ,, ,, ,, $\frac{3}{4}$,,	2
,, ,, ,, over 4 years,	2
	—
	58
Died in hospital,	14
Dead, time unknown,	6
	—
Total dead,	78

Number alive 6 months to 1 year,	11
,, ,, 1–2 years,	9
,, ,, 2–3 ,,	14
,, ,, 3–4 ,,	4
,, ,, 4–5 ,,	3
,, ,, over 5 years,	1
	—
Total number living,	42

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AN EXPERIMENTAL STUDY OF THE CONJUNCTIVAL TUBERCULIN TEST IN GUINEA PIGS INFECTED WITH HUMAN, BOVINE OR AVIAN TUBERCLE BACILLI. SPECIFICITY. REACTION-UNITY FOR THE GROUP. LACK OF SENSITIZATION.*

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I. PREVIOUS OBSERVATIONS.

(I) *Reactions in animals.* — Experiments with the skin or eye test in guinea pigs or rabbits are reported by a number of observers and usually with negative results, or reactions only in rare instances. Thus Daniëls[1] tested Calmette's ophthalmo-reaction in 4 tuberculous guinea pigs without success. Levi[2] experimented first with 1% and later with undiluted old tuberculin for conjunctival insufflations in tuberculous guinea pigs. The tests were negative. An attempt to produce cutaneous reactions was likewise unsuccessful. Wolff's[3] repeated conjunctival and cutaneous tests with undiluted tuberculin in artificially infected guinea pigs and rabbits similarly failed. In about one hundred and fifty trials by Nobecourt and Mantoux[4] with the conjunctival test on 15 rabbits infected with human tubercle bacilli, and tested every few days, a transient response was obtained only seven times and never before the nineteenth day. Cutaneous tests were constantly negative. Of 22 tuberculous guinea pigs, tested with the conjunctival method by Joannovics and Kapsammer,[5] 2 (inoculated twenty-nine and forty days previously) showed slight swelling and redness of the conjunctiva after insufflation with old tuberculin. Lüdke[6] obtained two positive conjunctival tests in 8 tuberculous rabbits and in 1 of 4 tuberculous guinea pigs. Vallée[7] found the ophthalmo-reaction "obscure" in tuberculous guinea pigs. Calmette, Breton and Petit[8] state that the intravenous injection of 1 ccm. of a fine emulsion of tubercle bacilli into rabbits resulted in positive conjunctival tests, beginning on the third day after inoculation, gradually increasing in intensity and disappearing after fifteen to eighteen days.†

The reports in the literature, therefore, are almost unanimous in indicating a failure or only a small measure of success in detecting tuberculosis in guinea pigs and rabbits by these tests. Although the experiments at the Massachusetts General Hospital agree in indicating that the test is not always reliable for the detection of tuberculosis in guinea pigs, reactions have been obtained in a much larger proportion of trials than in any series which I have seen previously reported. It may be that the negative results by other observers have been due in part to performance of the tests too soon after infection or to observation of the conjunctiva at too long an interval after the tests are made.

In larger animals the reports thus far are not numerous. Vallée[9] obtained reactions with the skin and conjunctival tests in 20 animals (cattle and horses) with tuberculosis. Undiluted tuberculin was used. Uninfected animals were negative. Arloing,[10] however, failed with the skin test in 19 tuberculous animals, including 5 cattle, 6 horses, 6 dogs, 1 rabbit and 1 guinea pig. In a later publication[11] he reports positive skin tests in 1 of 2 calves and 1 of 3 dogs. All of these animals had previously reacted to tuberculin by the subcutaneous method. In his first experiments the scarification of the skin was superficial, while in the latter a few drops of blood were drawn during the process of inoculation. Lignières[12] employed the ophthalmic and cutaneous tests in 200 tuberculous cattle with constantly positive results. Undiluted old tuberculin was used. Sound animals were negative.

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* From the Clinico-Pathological Laboratory of the Massachusetts General Hospital, J. H. Wright, M.D., Director. The writer was awarded the Dalton Scholarship for the pursuance of this investigation.

† I have repeated this experiment in one rabbit, tested on the first, second, fourth, sixth, seventh, tenth, thirteenth day, etc., after infection, and noted the first response on the tenth day.

(2) *Differential tests.* — It was stated by Koch[13] that cattle react to both human and bovine tuberculin, the response thus being a "group" reaction. Wolbach and Ernst[14] also found that guinea pigs infected with human or bovine tubercle bacilli respond as well to human or bovine tuberculin, given subcutaneously. Detre[15] believes that in man the application of unheated filtrates of cultures of human and bovine tubercle bacilli by the skin test enables the observer to differentiate the two infections by the relative extent of the response. He believes that infection with human or bovine tubercle bacilli, or both, may be thus indicated. It does not appear in the reviews of his work that the differential quality of his tests has been confirmed by any proof of the human or bovine type of the disease in the individuals tested. Confirmation by animal experiments is also lacking.

(3) *Sensitization.* — Calmette, Breton and Petit[16] claim to have obtained a response to diluted tuberculin (1:100) by the eye test as early as three hours after the injection of 0.2 mgm., 5 mgm. and 1 cgm. precipitated tuberculin into the ear vein of healthy rabbits. A feeble response was likewise obtained after the injection of 5 cgm., but the tests were negative if performed after three days in these animals or on controls or on rabbits which had received 10, 15 or 20 cgm. of tuberculin. As will be noted later, I have failed to obtain a reaction in healthy animals either by this or any other means. The same authors also found that the ingestion of 1 cgm., 5 cgm. or 1 dcgm. of tuberculin was effective in causing a response to the eye test in twelve hours, while tests were negative after two days.

II. PERSONAL OBSERVATIONS.

Method.

In February, March and April, 1908, 14 guinea pigs were inoculated as follows: One received into the peritoneal cavity a urinary sediment containing tubercle bacilli. Five animals were injected with a suspension from a pure culture of bovine bacilli. Three animals received an amount estimated at 5 mgm.* of tubercle bacilli into the peritoneal cavity. The others were given approximately 2½ mgm. into the subcutaneous tissue of the abdominal wall. Five animals were similarly inoculated with *human* tubercle bacilli, 2 receiving 5 mgm. into the peritoneal cavity, the others 2½ mgm. into the subcutaneous tissue as before. All the animals in this group showed tuberculosis at autopsy. In August, 1908, 3 guinea pigs were injected into the peritoneal cavity with *avian* tubercle bacilli, 2 receiving an amount estimated at 2½ mgm., the third, 500 mgm. These 3 animals were killed about seven weeks later. The 2 animals injected with only 2½ mgm. presented no macroscopic tuberculous lesions. The animal given 500 mgm. of avian bacilli was found to have an adhesion of the great omentum to the site of the inoculation in the abdominal wall. In this adhesion, and in the liver, six yellowish nodules about two millimeters in diameter were found. Smear preparations from these lesions showed tubercle bacilli. Throughout the experiments all the animals were kept in separate cages. No instance of spontaneous tuberculosis is known to have occurred in the animal room in the past twelve years.

The strains of human, bovine and avian tubercle bacilli † used in the experiments were kindly furnished by Prof. Theobald Smith.

As controls, 25 non-tuberculous guinea pigs and 3 rabbits have been used. Both the tuberculous and the non-tuberculous animals were tested by the conjunctival method with tuberculin. The results obtained on the tuberculous animals may be more conveniently considered later. For the non-tuberculous animals, it may be said that in 120 tests at varying intervals with tuberculins capable of causing a response in the infected group, there has been no reaction. Tests with tuberculin made by evaporating cultures of tubercle bacilli to one twentieth or even one thirtieth of their volume likewise proved negative.

The tuberculous animals have been tested at varying and usually short periods from the time of inoculation to their death. The customary procedure has been to insufflate one drop of different tuberculins into each eye for comparison of their relative effect, or to insufflate one eye, using the untested eye as a control. It has proved most satisfactory to do the test at about noon. The result was then observed at times in the afternoon, almost always again in the evening and at times again the next morning. Separate pipettes of approximately the same caliber have been used for the different tests and an interchange of these has been avoided by appropriate labels for each pipette. The pipettes were preserved in test tubes sealed with a cotton plug. The tests were always made with tuberculin obtained fresh from the stock bottles and the pipettes were sterilized before being refilled with tuberculin to avoid contamination.

Positive reactions may be indicated as early as two hours after the insufflation, usually reach their maximum intensity in from seven to eight hours and then gradually subside. The conjunctiva may again become normal in twenty to twenty-four hours and no trace of the reaction can usually be found after thirty-six to forty-eight hours A reaction is indicated, as in the human subject by injection, redness and swelling of the conjunctiva. It is usually confined to the palpebral conjunctiva and is best detected by observation of the lower lid between the lid margin and the bulbo-palpebral fold. In severe reactions there may be some eversion and edema of the lids. Care should be taken not to mistake the normal redness of the bulbo-palpebral fold for an inflamed conjunctiva. It is also important to note the condition of the conjunctiva prior to the test, since the insufflation of tuberculin into a conjunctival sac, the vessels of which are already injected, may result in slight hyperemia and the suspicion of a doubtful reaction in a non-tuberculous animal. With care, however, it can hardly be confused with the evident response in a positive test.

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* In the preparation of the material for injection, an original suspension was made of the tubercle bacilli in sterile water, to approximate the appearance of a twenty-four-hour-old culture of typhoid bacilli. Each cubic centimeter of a hundredfold dilution of this suspension was estimated to contain 5 mgm. of tubercle bacilli. The method was suggested by Prof. Theobald Smith.

† The strain of human tubercle bacilli labeled "Human XXIV" has already been described in full by Smith and Brown (Jour. o Med. Research, vol. xvi, No. 3, July, 1907).

Concerning the bovine and avian tubercle bacilli. Dr. Smith informs me that "Bovine IX" was isolated from the peritoneal tubercles of a tuberculous cow in March, 1906, by passage through guine pigs, cultivation on egg medium and finally on glycerine agar. I fulfills all the requirements of the bovine type. "Avian I" was isolated from a tuberculous pigeon in November, 1901, and fulfills all th requirements of the avian type.

Specificity.

(*A*) *Bovine and human infections.* — All the infected animals have responded positively to the conjunctival test with old tuberculin at some period in the course of the infection. An *interval of latency*, during which no response was elicitated, was observed in all the animals. From the time of inoculation with tubercle bacilli to the appearance of the reaction, there was a minimum period of eighteen and a maximum period of thirty-one days, with an average of twenty-four days. In general the reaction was almost constant after it had once appeared. Thus, of 120 trials performed within the *positive period*, 100 were positive, 9 were doubtful and 11 negative. The proximity of the fatal termination may account for 4 of the 11 negative tests, since these were performed during the last five days of life.

The occurrence of these 9 doubtful and the remaining 7 negative tests, preceded and followed by reactions, indicates that the test is unreliable for the detection of tuberculosis in guinea pigs. Four of the 7 failures occurred in one eye, from the use of human tuberculin, and were accompanied by positive tests with bovine tuberculin in the other eye in a guinea pig infected with bovine bacilli. Another failure, likewise, occurred with bovine tuberculin, while the eye tested at the same time with human tuberculin was doubtfully positive in an animal infected with human bacilli. The 2 remaining negative tests in this series were simultaneously negative with both human and bovine tuberculin in an animal infected with human bacilli. As will be noted later, the absence of positive tests from the opposite tuberculin in animals infected with human or bovine bacilli cannot be ascribed to differential properties in the two products. It may have been due to unsuccessful insufflation and it may be that the tuberculin was expelled from the conjunctival sac in these cases by forcible closure of the lids or movements on the part of the animal. The failure to obtain constantly positive tests in infected animals cannot, in my opinion, necessarily be regarded as an invalidation of the reliability of the test in man.

Considerable variation in susceptibility to the test was noted in the different animals. Thus in one in which it was applied twenty-four times, it was positive in 20, negative in only 4 trials, while in another tested ten times it was positive only twice, doubtful in the remaining trials.

The number of animals used in the experiments is too small for trustworthy deductions concerning the comparative behavior of the reactions, following subcutaneous or intraperitoneal infections, with large or small doses of tubercle bacilli or with extensive or slight generalization of the tuberculous process. It may be noted, however, that in this small number no constant or striking difference was observed in the duration of the latent period or the intensity of the reactions between intraperitoneal and subcutaneous infections, or with large or small doses of tubercle bacilli, but it may be mentioned that in the animal which responded only twice in ten trials there was specially widespread and extensive tuberculosis.

(*B*) *Avian infections.* — The animals infected with avian bacilli have also responded positively. In one of the animals injected with 2½ mgm. of bacilli, the test was positive only on the forty-first day after the inoculation. Although to one of the remaining animals only 2½ mgm. were given, and to the other 500 mgm., their response to the test was nearly the same. In both, the latent period lasted for fourteen days, and of 22 trials within the positive period all but 2 were positive.

The tests referred to in these groups have been made with old tuberculin ("T. O.") and usually with material kindly furnished by Prof. Theobald Smith. The response to this has been compared with samples of old tuberculin on the market and with our own laboratory product. In spite of the inevitable though probably slight variation in the strength of such products, no noteworthy difference has been observed when one has been used in one another at the same time in the other eye, but I have seen more intense reactions with old tuberculin in which the evaporation of the culture has been carried to one twentieth or one thirtieth of its volume.

Differential Tests.

The relation between the bovine, human and avian type of the infection and the response to the corresponding or different tuberculins has been the subject of special investigation. The testing of the different products was performed at the same time and the amount of tuberculin was as nearly as possible the same for each eye. Comparison was made only during the positive period, viz., in the interval after a positive reaction had appeared. In what follows old tuberculin from the different strains is compared.

Bovine infections. — In the 5 animals infected with bovine bacilli, 29 tests with bovine bacilli in one eye were simultanously compared with an equal number of tests with human tuberculin in the other eye. In 14 trials, the results were the same for both eyes, including 12 positive and 2 doubtful tests. In the remaining 15 tests, there was a response to bovine tuberculin alone in 3,* a more intense reaction with bovine tuberculin in 9,† while in 3 the reactions were more intense with human tuberculin. Five trials with bovine tuberculin were similarly compared with an equal number with avian tuberculin. In 2 instances, a reaction was produced by both, but was more intense with the bovine tuberculin. In the 3 remaining tests, there was a reaction only to the bovine tuberculin.

Human infections. — In the 5 animals infected with human bacilli, 20 trials each with human and bovine tuberculin were similarly compared. They were equally positive in 10, equally doubtful in 3, negative in 2, more intense with human tuberculin in 3 and with bovine tuberculin in the remaining 2. Of 3 tests each with human and avian tuberculin, a response was obtained only from the human tuberculin. The comparison of avian and bovine tuberculin resulted in a positive reaction with each in 1 instance, and equally doubtful reactions in 2 trials.

Avian infections. — Ten tests each with avian and bovine tuberculin were compared in the 3 animals inoculated with avian bacilli. They were equally positive in 9, while in the remaining trial there was a response only to the bovine tuberculin.

Other products of the tubercle bacillus have been tried in the hope of finding a specific substance capable of differential action. These tests were also made in the period during which there was a positive response to tuberculin. An emulsion of the tubercle bacillus ("B. E.") in 7 trials and the unaltered filtrate from glycerin bouillon cultures ("B. F.") in 7 trials elicited no response. Lack of concentration was doubtless responsible for failures with the latter. Acting on the supposition that an essential and specific substance might have been destroyed by heat in the manufacture of old tuberculin, cultures of tubercle bacilli were evaporated in vacuo ‡ to one tenth of their volume and the resulting fluid sterilized by passage through a Pasteur filter. A response was obtained with this material in each of ten tests, but the tuberculin thus made from either bovine or human tubercle bacilli proved equally effective on animals infected with either bovine or human bacilli. One unheated and concentrated bovine filtrate proved even more powerful on either bovine or human infections than ordinary old tuberculin.

It must be concluded, therefore, for these experiments, that animals infected with bovine, human or avian tubercle bacilli exhibit no constant differences in their conjunctival response to the corresponding or different tuberculins employed. Such slight differences as have been noted in the different infections are probably due rather to errors in application than to specific changes capable of detection by the homologous tuberculin. A reaction may be regarded as specific for the group, but not differential between its members.

This "group" reaction after infection with human, bovine or avian tubercle bacilli from the application of their tuberculins to the conjunctiva is thus in accord with previous observations on animals infected with human or bovine bacilli and tested by the subcutaneous method. It is still further confirmatory of the close relationship between these different strains of tubercle bacilli. The similar reaction-unity from filtrates fails to confirm Detre's belief in their differential value when tested by the cutaneous method in man.

Lack of Sensitization with Old Tuberculin. ("*T. O.*")

The observation in man that at times a repetition of the test with tuberculin may lead to positive reactions in cases previously negative, or a more intense reaction when the previous test was positive, made an experimental study of this question desirable.

The evidence in favor of such an occurrence in man may be instanced by the following examples. Löwenstein [17] has observed that the effect of 10 mgm. of tuberculin given subcutaneously as an initial injection may be less intense than that from the same dose reached in successive and ascending doses, and that the repetition of 0.2 mgm. may cause on the fourth injection a reaction which is only slightly less intense than that with 10 mgm. Löwenstein and Rappoport [18] have also noted that an increased susceptibility may persist for a year after the injection of 5 mgm. of tuberculin. Using the skin test in man, v. Pirquet [19] has found that previously negative cases at times becomes positive and previously positive cases may react more strongly when the test is repeated. So, also, with the eye test, in human beings, Levy [20] and Cohn [21] have noted that the repetition of the test may cause positive reactions in previously negative cases. According to Cohn this is true for adults and not for infants and may even obtain in tuberculous individuals for the eye not already tested.

The data already accumulated in studies on anaphylaxis and which have a bearing on this question may be briefly mentioned. Rosenau and Anderson [22] have shown that guinea pigs may be sensitized to horse serum by the injection of less than one two hundredth and fiftieth of a ccm. In one instance sensitization was effected by the injection of as small an amount as one millionth of a ccm. They have also found [23] that guinea pigs may be sensitized by dropping horse serum upon the eye. A certain interval must elapse between the administration of the sensitizing substance and the reaction of sensitization. In general this interval has been found to be about ten days. The sensitizing and toxic substances in horse serum, however, may be extinguished by heat, for Gay and Adler [24] have found that if horse serum is heated to 100° C.

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* All in animal XXIII.

† Seven in animal XXIII.

‡ Evaporation over sulphuric acid in the vacuum dessicator was found to be the quickest method of concentration. Concentration was also accomplished by drawing air, first passed through sulphuric acid, through the flasks containing cultures of tubercle bacilli, by means of a water vacuum apparatus. I am indebted to Dr. W. F. Boos for helpful suggestions on this part of the work.

for fifteen minutes it is no longer demonstrably toxic and that further heating to 100° C. for forty-five minutes also destroys its sensitizing power. Anderson and Rosenau's[25] experiments are confirmatory, but indicate a somewhat higher thermal extinction point. They noted that horse serum heated to 100° C. for one hour apparently loses its toxicity but retains some power of sensitization.

It is by no means certain that the results obtained with horse serum on guinea pigs can be safely applied in explanation of success or failure with tuberculin on guinea pigs or man. The analogy at least suggests, however, that the customary small doses of tuberculin might induce sensitization, that the reaction by repetition would occur only after a latent interval and that if a sensitizing quality is present in tuberculin it must be more resistant to heat than that in horse serum.

It has already been shown that the *toxic* substance in tuberculin preserved in glycerin is very resistant to heat. Koch[26] found that tuberculin ("T. O.") could be heated for hours at 130° C. and even to 160° C. without noticeable loss of power. It was doubtless tested by the injection method. In comparative tests with tuberculins made on the one hand by the concentration of cultures in vacuo without heat, and on the other by the application of 100° C. for one hour on 3 different days, followed by evaporation over a steam bath, I have been unable to note any constant difference in the intensity of the reactions when the two products were simultaneously compared by the conjunctival method in tuberculous guinea pigs. Indeed, tuberculin subjected to steam under pressure at an average temperature of 121° C., and at times reaching 126° C. for two hours, was still capable of causing conjunctival reactions.

The experiments of Gay and Adler, and Anderson and Rosenau, already mentioned, suggest that in horse serum the sensitizing is somewhat more resistant to heat than the toxic element. In consideration of the extreme thermostability of the toxic element in tuberculin, a *sensitizing* quality might still be assumed to exist. As it is of special interest to know if reactions from such an hypothetical substance can be induced in the non-tuberculous, I have sought by various means to obtain reactions to the conjunctival test in non-tuberculous animals after attempted sensitization.

The insufflation of old tuberculin ("T. O.") into the conjunctival sac of healthy guinea pigs, in single or successive doses, at intervals of a few days, followed by its repetition after an interval of ten days or more, proved ineffective in inducing a response. The subcutaneous injection of 2½ mgm. into one and 500 mgm. of old tuberculin into another guinea pig likewise failed to lead to positive conjunctival tests. The intraperitoneal injection of guinea pigs with 200 mgm., 400 mgm. or 1 ccm. of old tuberculin was negative. The intraperitoneal injection of dead tubercle bacilli in doses of 2, 5, and 500 mgm., respectively, in 3 guinea pigs, similarly failed. The intravenous injection of 500 mgm. into one and 5 mgm. of old tuberculin into another rabbit proved unsuccessful, thus failing to confirm the observation of Calmette, Breton and Petit, to which reference has already been made.

The occurrence of conjunctival reactions with old tuberculin only in tuberculous guinea pigs, and the failure to produce a response in non-tuberculous animals after attempted sensitization, is, I believe, confirmatory of the specificity of a reaction for the presence of tuberculosis in man. It certainly seems unlikely also that positive conjunctival tests can be induced in non-tuberculous individuals by sensitization, and yet the failure in guinea pigs cannot be unreservedly applied to man. Even tuberculous guinea pigs are relatively insusceptible to the conjunctival application of tuberculin and will tolerate it in full strength without injury, while severe and long-continued reactions are at times induced in man by dilutions of ½ and 1%. On the other hand, guinea pigs appear to be much more highly susceptible than man to sensitization with horse serum and might be expected to respond as well to any sensitizing quality in tuberculin.

No conclusive evidence can be brought forward bearing on the prevalent belief that in tuberculous individuals a response to tuberculin following a negative test or a more intense reaction after a positive test may be due to sensitization. The observations of such an occurrence are not as yet sufficiently numerous to eliminate an element of chance in the interpretations. A response from tuberculin already accumulated in the body from previous injections plus the amount injected for the final test may be considered for tests repeated at short intervals. A variation in the production in the body of an essential substance (tuberculin, antibody?) cannot be excluded and may be operative in the repetition of tests at long intervals. The failure to induce conjunctival reactions in non-tuberculous guinea pigs after attempted sensitization may be urged against sensitization as a factor in the tuberculous. It may be mentioned also that in the observation of repeated conjunctival tests on tuberculous guinea pigs no increase in the intensity of the reactions has been noted after many trials in the same eye, either at short or long intervals, provided the eye tested had returned to a normal condition. It has been noted, however, that more intense reactions may be induced in tuberculous animals by the application of tuberculin to a conjunctiva still showing a residue of inflammation from a previous test. It is not unlikely, therefore, that in some instances in man a slight degree of inflammation following a first and apparently negative conjunctival test has likewise been responsible for a more intense response in a second trial.

CONCLUSIONS.

(1) Non-tuberculous guinea pigs fail to respond to the conjunctival test with old tuberculin ("T. O.") of the ordinary concentration

or with stronger preparations in which the evaporation of the culture is carried to one twentieth or even one thirtieth of its volume. Attempts at sensitization with old tuberculin by various means have failed to elicit a response in sound animals.

(2) After subcutaneous and intraperitoneal infection of guinea pigs with human, bovine or avian tubercle bacilli, positive conjunctival tests with undiluted old tuberculin may usually be obtained after a variable interval. The period of incubation commonly terminates in from two to four weeks. The reaction may begin as early as two hours after the insufflation of tuberculin into the conjunctival sac, is usually at its height in seven to eight hours and may have subsided in twenty to twenty-four hours. The reaction is not invariably present and is, therefore, somewhat unreliable for the detection of tuberculosis in guinea pigs. In general, however, it occurs in a large proportion of the tests performed during the positive period, and when it occurs appears to be specific for tuberculosis of the human, bovine or avian type.

(3) The reaction, although specific for the group, appears not to be differential between the different types of infection. Animals infected with human, bovine or avian tubercle bacilli respond as well to the corresponding or different tuberculins. Unheated cultures of tubercle bacilli, concentrated in vacuo without heat and filtered through a porcelain filter, cause reactions in infected animals, but, like old tuberculin, are not differential in their action. The emulsion of tubercle bacilli (" B. E.") and unconcentrated filtrates (" B. F.") fail to elicit a response.

(4) This reaction-unity in guinea pigs infected with human, bovine or avian tubercle bacilli is confirmatory of the close relationship between these different strains of tubercle bacilli.

(5) The absence of reactions in non-tuberculous guinea pigs and the positive response in tuberculous animals is confirmatory of the specificity for tuberculosis of reactions in man. The failure to produce reactions in non-tuberculous animals after attempted sensitizations with old tuberculin suggests that reactions with this substance after repetition in man are not likely to occur in the non-tuberculous.

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BURSITIS SUBACROMIALIS, OR PERI-ARTHRITIS OF THE SHOULDER-JOINT.

(SUBDELTOID BURSITIS.)

BY ERNEST AMORY CODMAN, M.D., BOSTON.

(Continued from No. 19, p. 616.)

IT may be asked: " In the traumatic cases, why not suture the small rupture in the tendon of the supraspinatus at once? " If it were possible to diagnose those cases which would become troublesome, such an operation might be considered, but as most cases recover as easily as those just cited, I have not felt justified in attempting suture. In one case where the facets of insertion were torn off as shown by the x-ray, I did suture them, but the suture was ruptured during convalescence. In this case the fracture could be felt through the base of the bursa which was not torn.

Treatment. — Type II. What has been said in regard to the treatment of Type I applies to the more acute cases of Type II, while the adhesions are still more or less plastic. When they have become organized and firm, the question becomes quite different. We are then dealing with an actual mechanical impediment to motion instead of spasm of the neighboring muscles. Of course, frequently we meet both these factors, sometimes one predominating, sometimes the other. Where the spasm is the chief cause of limitation I believe the wisest course is to treat the case as if it were Type I. When the tenderness and pain have become subacute or quiescent, and stiffness is the chief factor, I think much time and pain may be saved by operation. We are then dealing with adhesions of cicatricial tissue. We have a choice between gradual stretching, rupture under an anesthetic and division of the cicatricial tissue.

In the severe cases we must advise treatment according to one of these three general plans:

Group A. Gradual stretching.
1. Leaving improvement to natural use.
2. Massage, passive and active exercises.
3. Manipulations by physician without anesthetic.
4. Zander exercises.
5. Baking, electric light, baths, etc.

Group B. Rupture under an anesthetic.
1. Manipulation under an anesthetic without incision.
2. Manipulation followed by fixation in abduction.

Group C. Division.
1. Incision into the bursa and direct division of adhesions.
2. Excision of the subdeltoid portion of the bursa.

I can best give my opinion of the comparative value of these forms of treatment after stating what my experience has been with each. The cases which follow are all in what I have called Type II, i. e., the worst kind of adherent cases. No two are exactly alike, because their causes are somewhat different, and the nervous and physical constitutions of the patients vary, but in general we are dealing with the same problem in all cases, i. e., shoulders in which the arc of rotation and abduction of the humerus is limited by adhesions chiefly in the subacromial, but also in the subcoracoid and other bursæ, as well as by shortening and stiffening of the short rotators.

I shall not give all my cases because it would only lead to confusion. I have reported only the worst cases and certain ones which seem typical. There have been no bad results except those here given in detail.

For convenience I have separated them in three groups:

A. Gradual stretching.
B. Rupture under an anesthetic.
C. Division or excision of adhesions.

Group A. Illustrative cases of Type II treated by gradual stretching.

Case III. *Adherent case with comparatively little pain. Duration, six months when first seen. Healthy, muscular, intelligent man.*

Treatment. — Condition carefully explained and details of exercises advised and faithfully carried out.

Result. — Recovery in five months, i. e., eleven months from onset.

Mr. G. F. R. Aged forty-five. Real estate agent. Referred by Dr. Boucher on June 11, 1906.

Well-developed athletic man in good physical condition. Previous history negative. Six months before he had fallen from his horse. He did not notice much trouble with his right shoulder until the evening, when he noticed lameness and pain. He called Dr. Boucher, who found no ecchymosis, crepitus or other sign of trauma. For a time there was considerable pain, especially at night, but in a few weeks all pain disappeared and he was troubled only by lameness and stiffness. He had had no treatment.

Examination. — Good general muscular condition and even the muscles of the affected side were in good condition except the spinati, which showed decided atrophy. Although the shoulder itself showed the characteristic limitations of Type II, the compensatory movement of the scapula had become developed to a high degree, so that the patient could dress himself, etc., fairly well. There was no pain on motion nor tenderness over the bursa. The case showed well how in an untreated athletic, healthy individual the protective spasm had locked the joint to avoid pain and then allowed organized adhesions to act as a splint. As the patient was an intelligent individual he readily understood my explanation of the condition and when offered the choice of allowing nature to take her course in stretching the adhesions or of having them ruptured or divided under an anesthetic, he wisely decided on the former. Since he had no pain I did not urge operation strongly. He was given very careful directions for exercises and shortly after went to the country for the summer. For several months he was constantly in the open air, leading a most healthful life and working a little on his farm, as well as keeping up the exercises. By September the shoulder motion was much better and by November, 1906, it was perfectly well.

There was at no time any sudden snapping or give in it, but the improvement came about by gradual stretching. I examined the shoulder on March 11, 1908, and found it normal.

Case IV. *Adherent case with slight pain. Duration, six weeks when first seen.*

Treatment. — Condition carefully explained and details of exercises advised and faithfully carried out.

Result. — Recovery in one year.

Mr. H. J. T., forty years. Office patient. Feb. 5, 1905.

Patient is a strong, well-developed man. Tailor. On Dec. 21, 1904, he stepped off a moving car and fell. He stretched out his right arm to save himself from falling and does not know exactly how he fell, but thinks that he did not strike on his shoulder. Immediate pain was noticed, but there was no ecchymosis or swelling. He had previously always been healthy, had no rheumatism or other chronic disease. He at first regarded the injury as a slight one and did not consult a doctor, but used camphorated oil, vaseline and liniment to rub on it, etc. There was slight tenderness over the bursa and the characteristic limitations of Type II. Pain was in the usual distribution on the other side of the arm and particularly at the insertion of the deltoid. Atrophy of the spinati was very marked. The shoulder gave him a great deal of trouble in any effort to raise the arm, but he was able to do his work as a tailor. His night's rest was somewhat disturbed, but he slept fairly well.

The condition was explained to him and he preferred gradual stretching of the adhesions to operation. He was given the following directions to carry out at home and I prescribed for him a daily routine, allowing a certain number of minutes for each of the following exercises:

1. While sitting at home in the evening he was directed to keep his elbow raised on the arm of a chair or table at his side as much of the time as possible.

2. He was told to mark the day of the month on the wall as high as possible with the lame arm and each succeeding day to write the date above that of the previous day.

3. He was to stand for five minutes each day with his elbow on the mantlepiece and place his feet as far away from the perpendicular as possible, so as to bring the weight of his body on the shoulder.

4. Once a day his wife was to give him massage and kneading of the shoulder muscles.

5. In order to encourage external rotation he was shown how to rotate the arm externally with a cane. The head of the cane is held in the hand, elbow is flexed and the shaft of the cane is allowed to lie over the outer side of the humerus just above the elbow and the tip grasped and pulled by the well hand.

The patient was very conscientious in the use of the above exercises and progressed slowly and satisfactorily although suffering considerable pain. After about six months of constant use of these exercises he was almost well, i.e., June 6, 1906, atrophy of the spinati was still present, but motion was practically perfect. He has been seen recently and has had no further trouble.

Case V. *Adherent case. Duration, three months when first seen.*

Treatment. — None but ordinary use.

Recovery in one year.

Mr. M. R. Age fifty-six. Gardener. Massachusetts General Hospital. Sept. 14, 1906. Referred by Dr. McCarthy, of Brockton.

Fairly well-developed laboring man. Rather stiff in all joints. On June 5 was chopping bean poles when he fell and struck his shoulder or injured it in raising his arm to protect himself. He tried to go on working, but the pain became so bad that he had to stop. Pain kept him awake several nights afterwards and was so bad that on the day following the injury he went to the Relief Hospital in Brockton for examination.

Examination was made under chloroform, but no sign of fracture was found. (Patient's statement.) The arm was bandaged for eight or ten days and then he was told to rub it, etc. Pain was very severe for several days and at night for some time.

The condition on Sept. 14, 1906, was a characteristic case of Type II. There was painless limitation of motion. The patient was advised to have manipulations under ether, but preferred to let well enough alone as long as he had no pain. He was examined again on April 20, 1908. He then stated that the arm continued to trouble him through the winter of 1906 and 1907 and still gives him slight pain on certain motions. Examination showed that the motions were now perfectly normal. He can raise the left hand as high behind his back as he can the right one. The improvement in motion was so gradual that he was unable to state at just what time his motions became normal.

Discussion of treatment by gradual stretching. — The above 3 cases are fairly characteristic of the adherent type in favorable individuals; many others might be mentioned. Similar lesions in high-strung or feeble nervous subjects give far greater pain and reduce the patient to a really pitiable condition. Although I have no question that treatment by gradual stretching (as it is done by the skillful masseur and Zander specialist, or by the intelligent physician who understands the importance of not urging the joint too frequently or too violently) has an undoubtedly good effect on these cases, yet my personal experience with cases that have consulted me when the lesion has existed six months or more shows me that there is no great difference between the treated and untreated cases except in palliation of symptoms, and possibly a few months in the duration of the disability.

The mistake of nagging at the adhesions too much and keeping them in a state of inflammation is quite as frequent as marked alleviation. Such cases as these just detailed, who have passed through the acute stage and come to painless adhesion, suffer less than those which have been interfered with from the first by too conscientious treatment. If these same cases had been obliged to take rest in abduction when they were first injured, and had not been allowed to use their arms when locked with scapulo-humeral spasm, I believe they would have recovered promptly. If, on the other hand, they had been manipulated during the painful stage they would have suffered more, even if they had not been made really worse.

It is unnecessary to discuss in detail such palliative treatments as electric light baths, baking, vibration, etc. They are all matters of palliation and will be used at the discretion of the attending physician. I have seen no evidence of any curative effect from them, and, as will be seen later, I consider incision the best palliative for pain.

Group B. Illustrative cases of Type II treated by rupture under anesthetic, followed by fixation in abduction.

Case VI. *Adherent case. Strong, healthy carpenter. Duration, five weeks when first seen.*

Treatment. — Manipulation under ether followed by fixation in abduction and later Zander exercises.

Result. — In six weeks well enough to work, although some pain continued for several months.

Mr. E. B. Fifty-three years. Massachusetts General Hospital. March 6, 1905.

Patient was a well-developed, healthy looking carpenter. His past history was negative. Five weeks previously, on Jan. 23, 1905, he had been running for a train and fell. He did not know exactly how his shoulder was hurt and did not think it was seriously injured at first. He loafed for three weeks and carried the arm in a sling. He used liniments and adhesive plaster strapping on it.

Examination showed slight swelling and thickening of the region of the subacromial bursa. Marked atrophy of the supra- and infra-spinatus, so that the spine of the scapula was particularly prominent on the injured side. Limitations were typical, i.e., with the elbow at the side, the forearm flexed to a right angle with the humerus; only a few degrees of rotation could be obtained without moving the scapula. Abduction of the humerus on the scapula could not be carried over 10° without pain. It was impossible for the patient to get his hand behind his back. (In future histories, for the sake of brevity, these limitations will be alluded to simply as characteristic of Type II.) The shoulder was so stiff and tender that it prevented his working with any comfort and prevented his obtaining proper sleep at night. He could not lie on the side of the injured arm and was frequently waked by the pain. The pain was felt about the insertion of the deltoid and along the outer side of the biceps muscle.

He was admitted to the hospital on March 6. Under ether I broke up the adhesions and put the arm in an abducted position in plaster. Plaster was kept on for six days and the patient was discharged to continue treatment with the Zander apparatus. Zander treatment was continued until April 29, when he returned to work and has remained at work since.

He was seen again on June 6, 1906. He said that the arm was then as good as ever, but that a slight pain had continued in it for several months after he had returned to work, but he had been able to do his regular work as a carpenter all the time. He was very grateful.

Examination showed a barely perceptible atrophy of the spinati and about five or ten degrees of limitation at the extreme limits of external rotation and abduction. This was the first case which was treated in abduction.

Case VII. *Adherent case in sallow, anemic, poorly nourished man.*

Duration, eight months when first seen.

Treatment. — Manipulation under ether and fixation in abduction.

Result. — Recovery in three months.

Mr. F. H. H. Age, forty-six. Referred by Drs. Putnam and Waterman on June 22, 1905. Laundry business.

Patient is a sallow, lethargic, tired-looking individual, but fairly well built and well muscled. Neurasthenic temperament. Eighteen years ago he fell in a gymnasium on the base of his spine and was laid up all the next summer. Six years ago he had the grippe and was very slow in recovering. Since then his "nerves have been shattered." Habits good. No venereal.

About eight months ago he hurt his shoulder in pulling on a lever in a automobile. The injury was not severe and yet did not get better. At first there was only lameless, but since December there has been much pain. Since then he has been occasionally to Dr. J. J. Putnam, who has treated him by baking and electricity. The arm troubled him a great deal; can hardly dress and undress himself, etc. Pain at night prevents continuous sleep, etc.

Examination shows the characteristic limitations of Type II. Tender spot on tuberosity on outer side of bicipital groove. Decided atrophy of spinati. Systolic murmur. Patient also complains of similar milder pains and tender spots about other joints.

Operation, June 24, 1905, at Eliot Hospital. Ether. Adhesions easily broken up. Abduction splint. Convalescence normal, except that pain at night continues to a certain extent. Splint removed at intervals and frequently adjusted. In twelve days left the hospital with instructions for exercises, etc. At that time could adduct slowly to full extent. External rotation somewhat limited. Pain gradually abated and in midsummer the patient went on a camping trip and returned practically well. When seen in the fall the motions were normal. He had greatly improved also in general appearance and in his muscular condition. A slight atrophy of the spinati still persisted.

Case VIII. *Adherent case in elderly laborer with neuritis and Volkman's paralysis.*

Duration, three months when first seen.

Treatment. — Manipulation followed by fixation on abduction splint.

Result. — Great immediate improvement. Shoulder well in four months, but evidences of Volkman's paralysis still present.

Mr. J. H. M. Aged sixty-eight. Massachusetts General Hospital. April 7, 1906. Well-developed elderly Irish laborer.

On Jan. 9, 1906, he fell forward on his outstretched arm on the sidewalk. He consulted a doctor and was treated in splints for seven weeks, although no fracture was demonstrated. Pain and stiffness during these weeks was great and a definite diagnosis could not be made. The following note was made on his condition in the Nerve Department of the Massachusetts General Hospital: "On March 6, 1906, hand somewhat swollen, passive motion of shoulder, elbow, wrist and finger joints limited. All motions of the shoulder made, but limited. Triceps weak. Atrophy forearm. Supinator longus preserved. No motion of thumb. Slight flexure of fingers; better ulnar pair. Sensation of touch diminished over ulnar distribution and radial and median apparently preserved. Reaction of degeneration of muscles supplied by ulnar nerve."

When seen by me on April 7 the above notes would still have been applicable. There were typical signs and symptoms of a severe case of Type II, as well as Volkman's contracture of the muscles of the forearm. His condition was pitiful. On April 11, under ether, I manipulated the shoulder and broke down a number of adhesions. After the operation the arm was placed on an abduction splint for a number of days. The convalescence was normal except for the contracture of the fingers, due to the stiffness of the forearm.

On April 23, with the hope of improving these contractures, I again gave ether and manipulated the wrist and fingers as well as the shoulder again. The patient was soon after discharged from the hospital considerably improved.

On Aug. 3, 1906, the shoulder was well, but the wrist and hand still showed typical Volkman's contracture although they were distinctly improved as compared to the condition before operation.

When examined on June 12, 1908, the motions of the shoulder were normal, those of the wrist about one half normal in extent. The contracture of the fingers still exists, although each finger could be moved voluntarily somewhat. There was marked atrophy of the intrinsic muscles of the hand, but they were not entirely paralyzed. The deformity was characteristic of a Volkman's contracture.

Case IX. *Adherent case in anemic woman.*

Duration, six months when first seen.

Treatment. — Manipulation under ether and fixation in abduction.

Result. — Recovery of motion almost immediate, but some pain persisted for seven months.

Mrs. E. B. J. Age fifty. Massachusetts General Hospital. June 22, 1906.

Well-nourished anemic looking woman. Had "erysipelas" of the hand (probably felon) in January, 1906. Arm was carried in a sling for a number of weeks and stiffness of the shoulder was noticed about the first of February. Came to hospital on May 4 for treatment of stiffening of fingers due to cicatrices. Shoulder was then stiff. Had been attending Zander room up to the time I saw her. The limitations were characteristic of Type II. There was no great complaint of pain, but the incapacity was great. Operation, June 26, 1906. Under ether the adhesions were broken up and the arm put on an abduction splint. On the second day after the operation the arm could be fully abducted.

On July 2 she returned to her home in Maine with careful directions for exercises. She kept up these exercises until February, 1907. There was some pain at times during the winter, but from the time of the operation she could clasp her hands over her head and behind her neck.

Case X. *Well-developed, well-nourished woman. Shoulder secondary to Colles' fracture.*

Duration, three months when first seen.

Treatment. — Manipulation under ether and fixation in abduction.

Result. — Recovery in two months.

Mrs. E. H. Age forty-nine. Massachusetts General Hospital. June 26, 1906.

Well-developed, well-nourished woman. Occupation, trained nurse. Three months ago fell and broke right arm. (Colles' fracture.) Splints were applied by local physician and kept on for three weeks. No injury to the shoulder was noticed at the time of the accident, but when the splints were removed the shoulder was found to be stiff and painful. The Colles' fracture did not do well and a typical "shiny hand" with stiff useless fingers resulted. The shoulder presented the characteristic symptoms and signs of Type II.

The patient entered the hospital in the service of Dr. Conant and was operated on (July 18, 1906) for a bad ventral hernia by Dr. Conant. Toward the end of the hernia operation I manipulated the shoulder and broke up the adhesions. A posterior splint was bandaged to the forearm and also to the head of the bed, thus holding the humerus in abduction. The stiffened fingers were also gently manipulated.

To my surprise the convalescence was not more painful than is usual after a laparotomy. The abdominal pain and soreness were so much greater than the pain in the shoulder that the latter was scarcely noticed. At the end of the week the patient was allowed to have the arm by her side, but frequently rested it in complete abduction. By the time she was able to sit up (about three weeks) she was able to do her hair and could use the arm pretty freely although some pain still continued. On Aug. 30 the motions of the shoulder were almost normal, although the fingers and wrist were still very stiff.

On April 1, 1908, she was again examined. The shoulder was perfectly normal in all the range of its motion, but she stated that occasionally there was a slight momentary twinge of pain in it. The wrist presented the usual limitations of an imperfectly set Colles' fracture.

Case XI. *Adherent case in intelligent man with good physique.*

Duration, three months when first seen.

Treatment. — Manipulation under ether and fixation in abduction, followed by exercises.

Result. — Recovery in three months.

Judge J. D. S. Age, sixty-one. Referred by Dr. G. C. Smith, on Sept. 6, 1906.

Bright intelligent man, with good physique for his age. Previous history negative. Not rheumatic. Onset of trouble with shoulder was insidious, three or four months ago. No known cause. For two or three months it has been considerably worse, and for the last one or two months has interfered with sleep. There is pain in the day time, too; certain motions and positions caused quite sharp pain. The pain is mostly in the outer side of the upper arm.

Examination showed distinct atrophy of the infra- and supra-spinatus. Tenderness greater in posterior than anterior portion of bursa. Slight atrophy of triceps and deltoid. Limitations characteristic of Type II.

Operation at Eliot Hospital, Sept. 7, 1906. Under nitrous oxide adhesions broken up. Humerus abducted by means of posterior forearm splint attached to head of bed.

My notes state, "Kept in bed three days with the arm abducted. Great discomfort at night and little sleep. On the whole more comfortable than cases created on splint. Massage, passive and active motion, every day until Sept. 17. At this date motion nearly normal in abduction, but both internal and external rotation limited one half." Passive motion at office under nitrous oxide with still greater improvement. Within a few days after this he left Boston.

This patient was able to learn his post-operative exercises easily, because he could understand my explanations of the importance of keeping up motion to to prevent the adhesions from reforming. The following letter from him on March 16, 1908, gives a very good idea of his convalescence:

"*My dear Dr. Codman,* — I have your kind letter of the 11th inst., inquiring in regard to my shoulder. I will endeavor to answer your questions, although I cannot be be very accurate with respect to dates.

"1. Pain at night continued severe enough to interfere with sleep to some extent until Oct. 1, 1906; operation performed Sept. 7, 1906.

"2. I could dress myself alone, with some discomfort, by Oct. 10.

"3. I could clasp my hands over my head, I think, about the middle of October, and behind my back about Nov. 10.

"4. I think I was symptomatically well by the first of December, at which time I could clasp my hands over my head and behind my back without much difficulty, and by Christmas without pain. The most difficult matter I had to overcome was raising my hand between the shoulders behind.

"5. I called myself recovered by the first of the year 1907.

"There is this I wish to add to this statement: There are certain positions in which I get my shoulder, when raising my hand and putting it behind my head, or raising it behind my back in certain positions, where I can feel a lameness in the left shoulder, which I do not get in placing my other arm in the same position. I am, however, in the enjoyment of good health and am glad that I discovered what was the trouble with me and applied the remedy.

"I think I am somewhat of a coward with respect to physical pain. I often laugh at the howling I let out on ———Street, in that private hospital on my first stay there. I never shall forget my creeping out of bed the last of my stop there to examine the record of the night nurse. Her last endorsement one morning was something like this: 'Patient claims he has not slept during the night. He slept nearly all the time.'"

"With kindest regards, etc."

(*To be continued.*)

Boston City Hospital.

CLINICAL MEETINGS OF THE STAFF, DEC. 19, 1907; JAN. 16, FEB. 20, AND APRIL 16, 1908.

I. DISLOCATION AND FRACTURE OF ASTRAGALUS. II. VOLVULUS OF LOWER ILEUM. III, IV, V. CLEFT PALATES.

BY HOWARD A. LOTHROP, M.D.

Case I. This patient is a man about thirty-five years of age. He is a laborer and, as you observe, he enjoys good general health. About three and one-half weeks ago he fell down one flight of stairs, sustaining injury to the right ankle for which he was brought to the hospital immediately. The only injury sustained was to the right ankle. Inspection of this showed the foot rotated inward moderately, and showed, also, a prominence in front and to the outer side of the ankle. By palpation, it was possible to decide that probably we had to do with a dislocation of the astragalus from the tibia and fibula and also a separation of its head from the scaphoid. There was, however, obscure crepitus. Two x-ray pictures taken immediately showed that there was a transverse fracture across the body of the astragalus, leaving its posterior quarter in a normal position, while the larger and anterior fragment was dislocated forward and outward. The skin over the head of the astragalus was very tense and nearly broken through. Under ether all attempts at taxis failed to restore the bones to their proper positions, and it was decided to expose the part by operation. Two curved incisions were resorted to, one below and in front of the outer malleolus, and the other in a corresponding relation to the inner malleolus. The astragalus was found dislocated forward and outward, and rotated about 180° on its normal axis. The small posterior fragment was observed to be in place. The astragalus had been stripped of all attachment to soft parts except in a small area on its outer aspect near its neck. In fact, the bone came out readily through the external incision on to the surface of the foot. It was thought wise to attempt to save this fragment rather than remove it and, consequently, with a little difficulty, it was replaced in its normal position. After reduction the ankle resumed its normal outline. The internal wound was closed. The external wound was also closed, except for a half inch at its posterior extremity, where no stitches were applied, so as to allow the escape of serum and thereby loosen the tension. The parts were immobilized by a plaster of Paris bandage. During all the convalescence the pulse and temperature have remained normal. The internal wound closed by first intention. The greater part of the external wound closed in the same manner. As you observe, all wounds are now healed except for a small granulating area. The patient is comfortable. There has never been any deep suppuration. It appears now that all wounds will become healed and that the fragment of the astragalus will be preserved. He will probably obtain a very serviceable ankle.

Case II. We have here a young man, twenty-six years of age. Other than an acute attack of appendicitis, three years ago, he has never had any illness, and has always been active and muscular. He is a machinist. Three years ago he underwent an operation in a neighboring hospital for acute appendicitis. At that time a five-inch incision was made, and the wound was drained for a long time. Shortly after operation there developed a large ventral hernia which has increased somewhat since.

Five days ago, lasting for about eighteen hours, he had an attack of acute, general pain in the abdomen.

This disappeared and he says he was perfectly well for the two succeeding days. Twenty-four hours ago he was again attacked in a similar manner. This pain was accompanied by nausea and vomiting. Examination showed the presence of moderate spasm of the abdominal wall and not much tenderness in any spot. He was then complaining of general colicky pains. The pulse was slightly elevated; temperature and respiration, normal. When lying on his back there was no bulging at the scar. No tumor could be palpated. It was obvious that he was suffering a great deal and that the condition was probably attributable to an internal concealed strangulation; most likely due to the intestine being constricted by bands or to a volvulus. An elliptical incision was made so as to excise the old scar, and the abdomen opened. Coils of intestine were found adherent to this scar, which were freed. Median to the scar a few coils of intestine presented, which were distended and of a dark color, while other portions of the intestine were normal and collapsed. The exploring hand, passed into the abdomen and toward the pelvis, showed that the latter was packed solid with small intestine, and running down through this mass of impacted intestine was a more dense, bandlike tissue which was found to be the mesentery of the lower portion of the ileum tightly twisted upon itself. Although there were numerous adhesions in the region of the old wound, no definite relation was made out between this twist and any bands. There were about 1,000 ccm. of slightly hemorrhagic serum free in the abdominal cavity. The strangulated coils of intestine were drawn out through the wound, and after the mesentery was untwisted, the normal color of the intestine returned. After freeing most of the adhesions and irrigating the abdominal cavity with a saline solution, the wound was closed by layers, thus curing the hernia. As you observe at this first dressing, just one week after operation, the wound has closed by first intention. His convalescence has been uninterrupted.

Cases III, IV and V. Cleft palates. — CASE III. This little girl is nine years old. She had a cleft of the soft and hard palates extending to within one-quarter inch of the incisor teeth. She was operated four weeks ago. You will observe that restoration of the parts has been complete and that union is perfectly formed, so that the median scar from in front to the top of the uvula is scarcely perceptible. The last stitches were removed in twelve days.

CASE IV. This boy is five years old. Originally, he had a harelip which has been repaired elsewhere. He was operated three weeks ago for a cleft of the soft and hard palate extending close to the incisor teeth. What existed of the horizontal plates of the superior maxillæ and palate bones pointed very much upward and inward so that the cleft was a very wide one. At the end of the eighth day the stitches which held the soft palate cut through so that this portion separated. On the ninth day ether was again administered and the sutures reapplied. The original operation was about three weeks ago and you will observe that the restored parts have remained intact except that a bifid uvula remains which will be repaired shortly.

CASE V. This patient is seven years old. Originally she had a cleft of the soft palate. This was operated unsuccessfully about one and one-half years ago. As a complication she had an acute left otitis media. Her second operation was done over a week ago and you observe the stitches *in situ* and there has been no separation of the flaps. From all appearances there is every indication that a perfect result will be obtained.

A brief outline of the technic used in these cases follows: General anesthesia with ether administered with a cone. Rose position. An incision was made on either side extending from just anterior to the point of cleft, along the junction of alveolar process and horizontal plate, backward to the end of the alveolus, thence around the alveolus backward over the hamular process toward the pharynx. Elevation of soft parts and periosteum to the end of the horizontal plates; exposure of the hamular process and breaking the same toward the median line to free the tendon of the tensor palator muscle and freeing the soft parts along the posterior part of the incision. Along the middle portion of these loosened flaps the incision was made to communicate with the nasal fossa. The flaps were freed so that these could be readily approximated without discomfort. Then a comparatively generous strip of mucous membrane was removed for the whole distance of the cleft. The flaps were then united by interrupted sutures of Pagenstecher thread tied with a minimum amount of tension. At no time were the flaps grasped with forceps so as to reduce injury to a minimum. Small sea sponges were used to absorb blood. The after-treatment consisted of the administration of a liquid diet and occasional spraying of the parts with an alkaline solution. No stitches were removed for eight days and those that were still holding without undue irritation were left for nearly two weeks. Patients were up and about after the second day.

A CASE OF PERFORATING DUODENAL ULCER.

BY F. B. LUND, M.D.

W. K., thirty-seven years of age, painter, was seen by me at ten o'clock on the evening of Jan. 4. About one hour before he had been seized with a very severe abdominal pain and vomiting. He stated that his health had been previously good and that he had had no stomach trouble or indigestion. Examination showed that he was emaciated; temperature 99; pulse 88, good quality; entire abdomen rigid as a board, but not distended; tenderness very marked in epigastrium and right hypochondrium. Although the case looked like one of perforation it was thought to be too soon to determine whether perforation had actually occurred, and the patient was left for the night. In the morning the condition was practically the same. He had not vomited through the night and his pulse had remained good. Accordingly, the operation was proceeded with. A right rectus incision was made; fibrin found on pyloric portion of the stomach and on the first portion of the duodenum. On separating the second portion of the duodenum from the parietal peritoneum, to which it was lightly adherent by fresh fibrinous adhesions, a minute perforation was found in the second portion of the duodenum. The perforation was surrounded by a small area of induration. It was inverted and sutured with continuous linen sutures without difficulty. The abdomen, which contained sero-purulent fluid, was then thoroughly washed out and drained by means of a glass tube introduced through a small incision above the pubes. A stab wound was made in right flank, through which a cigarette drain was introduced into the infected area surrounding the ulcer. The right rectus incision was sutured with through and through sutures, without drainage. The glass drainage tube was removed from the pelvis in twenty-four hours. Recovery uneventful;

patient left the hospital in three weeks, having gained considerably in weight and general condition. The case is interesting from the fact that previous to the operation there were no symptoms to suggest the presence of ulcer. This has been the case in several similar cases operated upon by the writer. In fact, it demonstrates that in making our diagnosis we cannot depend upon the history.

The same evening that this man came in, another patient was operated upon with a similar history in which the lesion was a perforation of the gall bladder, and the result was fatal. There was, however, previous history of attacks of abdominal pain from which the diagnosis of gallstones might have been made. Perforation in this case, as in another recent case operated upon by the writer, lay close to the neck of the gall bladder and not at the fundus.

In the writer's experience, these perforations of the gall bladder into the general abdominal cavity are more to be dreaded than perforations of the duodenum or stomach, as the infection seems to be more virulent. Diagnosis between the two lesions is usually impossible.

A CASE OF RECURRENT PNEUMONIA.

BY CHARLES F. WITHINGTON, M.D.

THE patient, a healthy young teamster of thirty, appears to have an unusual susceptibility to this infection.

He says that he had an attack of pneumonia five years ago which laid him off from his work for eleven weeks. A year later he had a second attack which lasted with its convalescence five weeks. Since then he has been well till the present attack. The peculiarity of this attack is, that it has consisted of one invasion, followed shortly after convalescence by a true recurrence. The first attack involved the left lower lobe, white blood count, 15,000; crisis occurred on the ninth day. On the fourteenth day resolution was nearly complete. On the sixteenth day he sat up and continued to be well till the twenty-second day, when the temperature suddenly rose to 103.5° and continued at about that point for four days. White blood count, 30,000; consolidation in the right lower lobe, which quickly involved the right upper lobe. Crisis again occurred on the twenty-seventh day, since when there has been no fever; resolution was established on that day. Five days later he was again sitting up, since when he has remained well. In other words: he had pneumonia of the left lung of nine days' duration; was then well for twelve days; then had a pneumonia of the right side of four days' duration.

The term pneumonic *relapse* is suggested by Aufrecht in Nothnagel as a preferable one for what is sometimes called pneumonia *migrans*. He believes that when a consolidation in one lobe has been followed after some time by a consolidation in another distant lobe, this is due to the fact that diplococcus pneumonia in the second lobe has been delayed in its development in consequence of the influence of the products of metabolism which were introduced into the blood from the originally diseased area. From this view we must assume that the conditions for the later infection were originally present in this later consolidated lobe but did not become at once operative.

From such relapsing pneumonia a *recurrent* pneumonia is to be distinguished. This Aufrecht states to be exceedingly rare. A recurrent pneumonia is one in which, after an intermediate period of from at least three days to several weeks, with freedom from fever and a return to the normal of the originally involved lobe or lobes, a new infiltration of the same or other lobes has taken place.

Such a recurrence has been observed after five days, but is said to be more "usual" from the fifteenth to the sixteenth day.

I have preferred, in accordance with the above distinction, to apply to the present case the word "recurrence" rather than "relapse." The two words are, however, by many writers used interchangeably.

Musser, in Osler's "Modern Medicine," would restrict the term "relapse" to cases where "a fall of temperature is followed after a time (two or three days) by undoubted evidences of beginning resolution, whereupon a fresh attack is subsequently precipitated which invades the *same location* as the original one." Where a new area is involved he would consider it a migratory pneumonia.

On the other hand, Wagner says that "if, after at least three days to several weeks after the defervescence a new infiltration of the same *or other lobes* with all the general characteristic phenomena of a local and general nature occurs, a relapse has without question taken place."

The rarity of recurrent pneumonia appears to be indicated by the percentage of 0.60 to 0.70%, and the interval in 7 cases of Fränkel's was from one to twenty-six days; on the average, nine days. The duration of the second attack in these seven cases averaged five and five-seventh days, as against seven and one-seventh days in their first attacks.

It is generally agreed that the duration of relapses is less than of primary attacks.

Sears and Larrabee, in the twelfth series of medical and surgical reports of this hospital, 1901, found 8 cases of "relapse" among 949 cases of pneumonia.

A. L. Mason, writing two years later (ibid. series, 14), says that in his thirty years of hospital experience he has seen only two or three such cases. He places their frequency at less than 1%, and says that while the relapse may be "abortive and mild, it is oftener severe and dangerous, especially from collapse or complications after the second crisis."

In the present case the patient seems to have derived an immunity from his first attack insufficient to protect him against a speedy second infection, but sufficient by the prompt response of the leucocytes to render the second attack very brief.

I. RUPTURED EXTRA-UTERINE PREGNANCY. II. LAPAROTOMY WITH SECONDARY HEMORRHAGE, SIMULTANEOUS WITH MENSTRUATION. III. LAPAROTOMY FOR RUPTURE OF THE UTERUS DUE TO FORCIBLE DILATION OF THE CERVIX.

BY NATHANIEL R. MASON, M.D.

MRS. A. B. Entered the hospital at midnight, June 14, 1907, with the following history:

One full-term child seven years ago. Since that time catamenia regular up to two months ago. Two weeks ago had slight show of blood, accompanied by sharp pain in lower abdomen which lasted for a few hours. Show of blood again yesterday. At noon to-day was seized with severe pain in the lower abdomen while at stool, accompanied by nausea and vomiting. Abdominal pain persisted, but of less severity.

Physical examination. — Well-developed and well-nourished. Pulse 120, of extremely poor quality. Temperature, 98°. Marked anemia. Mucous membranes blanched. Abdomen considerably distended. Shifting dullness in both flanks. General abdominal tenderness, most marked in the right lower quadrant where there was voluntary spasm. No rigidity. Vaginal examination showed a uterus somewhat enlarged and pushed to the left, high in the pelvis, by a round tender mass which filled up the right cul-de-sac.

Laparotomy was immediately performed and the abdomen was found filled with fluid and clotted blood. Globular mass low down on the right about six inches in diameter. Gentle palpation of this mass resulted in its rupture, revealing it to be the amniotic sac, containing a living fetus of about a four and a half months' size. Lacerated right tube through which fetus had been extracted tied off and removed with the sac. Blood clots removed. Pelvis sponged out. Abdomen closed with mass sutures of silk-worm gut, except at the lower angle of the incision, allowing for the passage of a gauze drain extending to the base of the right broad ligament. Operation was performed under primary anesthesia and its duration was nine minutes. In spite of heroic stimulation, the patient failed to respond and died in forty-five minutes.

Fetus shown.

Mrs. V. M., thirty-four years old, born in Boston. Housewife.

Present illness. — For several months pain in both lower abdominal quadrants, back and legs.

Previous history. — Occasional pain in lower abdomen during past five years Moderate white intermittent vaginal discharge for five years.

Physical examination. — Well-developed and fairly well-nourished woman. Heart and lungs normal. Abdomen negative. Bimanual examination showed uterus of normal size, in anterior position and fairly movable. Bilateral adherent tubo-ovarian masses.

Laparotomy. — Sept. 23, 1907. Median incision. Uterus found as previously noted. Mass on left bound down by adhesions composed of tube and ovary. Mass shelled out with considerable difficulty and tied off. Peritoneum closed over cavity, from which there was moderate oozing of blood. On the right markedly enlarged tortuous tube with fimbriated extremity adherent to pelvic wall. Tube removed. Ovary left. Normal appendix removed. Small gauze wick placed behind uterus and down to base of left broad ligament. Uterus suspended. Abdomen closed in layers with an exit left for drain at lower angle of incision.

Good ether recovery. Slight shock. Vomited few times. Slight stain of blood on wick. Pulse dropped promptly to 108 and then rose gradually to 124 twelve hours after operation. Moderate abdominal distention relieved by enema. Examination of abdomen revealed no dullness. Pulse remained in the vicinity of 120 and the temperature ranged between 98° and 99°.

Three days after operation patient commenced to menstruate and developed slight abdominal distention with pain. After few hours showed signs of collapse. Pulse rose to 136 and became of poor quality. Temperature, 98°. Dullness in left flank. Foot of bed raised. Salt solution given under breast. Dressing done for first time. Considerable blood followed removal of wick. Abdomen re-opened. Pelvis found filled with fresh blood, with oozing from left broad ligament. Blood sponged out. Left pelvis tightly packed with wicks soaked in 1-1000 adrenalin chloride solution.

Slow recovery from shock. Moderate elevation of pulse and temperature for two weeks from breaking down of abdominal wound. Discharged well forty-seven days after operation.

This case illustrates the inadvisability of performing pelvic operations upon women during or near the menstrual period, when the pelvic organs are engorged with blood and thereby increase the danger of hemorrhage.

Mrs. M. B., twenty-six years old, born in Ireland. Housewife.

Present illness. — Last regular period, six and a half months ago. For past six weeks has flowed most of time, using two to three napkins daily.

Previous history. — Always well. One full-term child in 1903. Three miscarriages, the first in 1905 and the last in 1906.

Physical examination. — Well-developed and well-nourished woman. Chest normal. Uterus symmetrically enlarged by a six and a half months' pregnancy. Moderate bloody vaginal flow.

Patient was kept under observation for eleven days after entering the hospital and the flowing persisted. Placenta previa seemed probable, and it was deemed advisable to empty the uterus.

On Aug. 16, 1907, this treatment was carried out. Dilatation of rigid os was started with glove stretcher and completed by Reynold's dilator and the hand. Marginal placenta previa. Profuse hemorrhage. Fetus presented by breech and was easily extracted. Deep tear in left side of cervix obtained up to and across left vaginal vault, apparently not involving lower segment of uterus. Cervical and vaginal lacerations repaired.

At end of delivery patient was in excellent condition, with pulse of 120, of good quality. It rose steadily in rate and deteriorated in quality until five hours after operation it was 160, weak and compressible. Patient restless and blanched. Slight flow of blood from vagina. Left lower abdomen very tender and dull to percussion.

Laparotomy. — Abdomen opened by median incision. Uterus found on right, extending one half way to umbilicus and of about size of large grape fruit. Mass of similar size on left consisting of hematoma springing from broad ligament. Tumor incised over top and contained blood evacuated. Laceration about two inches long in left lower uterine segment discovered and sutured. Layers of incised broad ligament brought together. Abdomen closed without drainage.

For ten days pulse and temperature were moderately elevated and then fell to normal. On twentieth day following delivery phlebitis of right leg appeared with slight elevation of pulse and temperature which persisted for four days and then disappeared. Abdominal wound healed by first intention. Patient was discharged well thirty-one days after delivery. Pelvic examination at this time was as follows: Cervix well healed. Uterus retroverted to between first and second degrees and cannot be raised. Well-healed scar across left vault, where there is marked induration.

This case shows well the ever-present danger of rupture of the uterus, where rapid dilatation of a rigid os is carried out. Cases of this type are much better treated by multiple deep incisions of the cervix according to the method of Dührsen.

Reports of Societies.

CONGRESS ON TUBERCULOSIS, WASHINGTON, 1908. SECTION I.

AGGLUTINATING POWER IN TUBERCULOUS PATIENTS. SERUM DIAGNOSIS. SERUM PROGNOSIS.

BY PAUL COURMONT, M.D., LYONS, FRANCE.

Summary.

1. THE agglutinating power of the humoral liquids in tuberculous patients must be considered as an important symptom of tubercular infection. It should be studied from the points of view of the age of the patient, localization, form and degree of the lesions, and also in relation to other symptoms of infection or protective reactions in every case.

2. In order that the results shall be valuable, the serum reaction must be studied under fixed conditions regarding the choice of the culture, method and technic of the reaction.

3. Granted that the agglutinating power of normal serum varies according to the age, and also to the animal species investigated, the serum reaction has a diagnostic value only when the degree of agglutination is higher than the ordinary degree of agglutinating power of the serum of normal individuals of the same age and belonging to the same species.

4. *Serum diagnosis.* — For practical purposes, serum reaction must be resorted to with great care. Its results must be compared with the other symptoms and not interpreted blindly. It would not be wise to regard a patient as clinically tuberculous for the sole reason that his serum agglutinates Koch's bacilli. The reaction can have no diagnostic value unless there are reasons justifying the suspicion of tuberculosis. In such cases, however, a positive serum reaction has great value. Negative reaction is of little value, as is generally the case with negative signs. Diagnostically, serum reaction can be considered from two different points of view.

(*a*) General reaction (with blood serum). It does not give information as regards the location of the lesions, and indicates only that the system has been, or is, actually under the influence of tuberculosis. It is the clinician's task to interpret this information and to derive from it conclusions concerning the location of the lesions. Serum diagnosis will be of special value in children, in old people and also in adults suffering from chronic or latent forms of tuberculosis. Statistics indicating the frequency of latent tuberculosis in adults who clinically do not appear tuberculous are almost the same with serum reaction as with the tuberculin test (either subcutaneous or in the eye).

(*b*) Local serum reaction. This consists in testing the agglutinating power of serous effusions and indicates the location of the lesion. It is particularly useful for the diagnosis of tubercular pleurisy, and its results are in accordance with those given by inoculation or cyto-diagnosis.

5. *Nature and prognostic value of serum reaction in tuberculous patients.* — As is the case in any other diagnosis, the agglutinating power of blood serum and other organic liquids in tuberculosis is proportional to the resisting power of the patient and is in inverse ratio to the virulence of infection. Serum reaction is negative, especially in very serious or very advanced cases of tuberculosis. It reaches its maximum height in cases which are in the process of healing. It can diminish or disappear sometimes before death. It can, on the contrary, increase when there is an improvement pointing towards healing or an arrest of the process. It seems to be an index of the protective reaction of the system.

Practically, a study of the serum reaction and its variations can be of some prognostic value. In tubercular pleural effusions, increasing agglutinating power indicates favorable prognosis, but a decreasing or absent agglutinating power indicates a fatal termination.

HOMOGENEOUS CULTURES OF THE BACILLI OF TUBERCULOSIS.

BY S. ARLOING, M.D.,
AND
PAUL COURMONT, M.D., LYONS.

Summary.

IT was in 1898 that S. Arloing discovered the homogeneous culture of tubercle bacillus. Since then S. Arloing and Paul Courmont have carried on this study. They have secured seven races of homogeneous cultures of the Koch bacillus from different sources: five human, one bovine and two avian. Paul Courmont has succeeded in making homogeneous the first bacillus isolated by Koch, cultivated for twenty-five years in different laboratories. It is not, therefore, an exceptional fact, but the question of the adaptation of the tubercle bacillus to live in homogeneous cultures, that is to say, in liquid media, uniformly distributed and isolated one from the other. The authors have studied the variations in form, in rapidity of growth, resistance to acids and virulence of the bacillus thus modified. The homogeneous cultures retain certain characteristics, making it possible to assert that they are actually tubercle bacilli; among others, the power of producing tuberculosis. Some of these cultures are easily agglutinated and are valuable for serum diagnosis (the method of Arloing and Courmont). The discovery of these authors has then a practical importance (serum diagnosis; serum prognosis). At the same time, also, it is of great interest from the point of view of the general biology of bacteria.

THE HUMORAL PROPERTIES OF TUBERCULAR LESIONS. DIAGNOSIS. PROGNOSIS.

BY PAUL COURMONT, M.D., LYONS.

Summary.

THE author has studied the fluid of tubercular lesions, especially those of the pleura. Conclusions:

1. Quantity. Great quantity in a serous tubercular lesion is a good characteristic.

2. Coagulability. Increased proportion of fibrin and the production of coagulum is a favorable sign, and the converse is also true.

3. Anaphylactic toxicity. Tubercular lesions are very poisonous to rabbits upon intravenous injection. The author discovered in 1900 the anaphylactic property of tubercular lesions inoculated in guinea pigs. Whilst a large single dose is not toxic, several small doses repeated will kill the animal. It is very important to know whether man is anaphylactized by the resorption of his own infectious material. (See Paul Courmont: *Archives of Pharmacodynamics*, 1904.)

4. Bactericidal power. The author has demonstrated that the liquid of pleurisy is bactericidal in vitro for the homogeneous culture of Koch's bacillus. (Soc. Biol., 1898.) This bactericidal power constitutes a means of defense of the organism.

5. Agglutinating power. Pleural tubercular lesions agglutinate tubercle bacilli. (See same author's special communication to the Washington Congress on serum diagnosis.) Application to diagnosis and prognosis (more than one hundred and twenty observations by the author.)

6. The pleura play an active part in the production of antibodies and are not simply passive filters.

SECTION IV.

INTERMITTENT ALBUMINURIA OF CHILDHOOD CONSIDERED IN ITS RELATION TO HEREDITARY TUBERCULOSIS.

BY J. TEISSIER, M.D., LYONS.

Summary.

Hereditary tuberculosis may attack the kidney in a child or an adult in one of two ways:

1. Certain individuals present a more or less abundant albuminuria, which is intermittent, and which may present one of the well-known classic cycles; but it disappears as the pulmonary localization becomes established or gives rise to general lesions, and may, therefore, be termed pretuberculous albuminuria.

This form of albuminuria does not necessarily imply the existence of renal tuberculosis, but, on the contrary, seems to have a toxic origin and resembles the bacteriolysis which is an expression of the spontaneous defensive forces of the organism. As soon as this spontaneous destruction ceases, tuberculosis develops and the albuminuria comes to an end.

2. We have a second series of cases which are much more numerous. The kidney is affected in a peculiar manner, which we have been able, by a long series of similar observations, to determine almost with certainty; the kidney reacts very slowly and sluggishly to the action of the tuberculous toxin transmitted by the parent and a slight degree of latent nephritis is produced which results in a very relative impermeability, relieving itself in a moderate diminution of the total molecular diuresis, an increase in the coefficient of Korany and also in a slight elevation of the blood pressure; a moderately severe albuminuria, usually intermittent, either of the matinal (morning) type or frankly orthostatic (present during the active hours of the day); and finally, as the hallmark of its tuberculous origin, a well-defined d'Arloing-Courmont serum-reaction, often exceeding one fifteenth. These cases, which make up more than 34% of our statistics of intermittent albuminuria in young subjects, do not eventuate in actual tuberculosis. For this reason they seem to justify the term "paratuberculous albuminuria," and many of these cases belong to the category of spontaneous immunization.

THE AMERICAN THERAPEUTIC SOCIETY.

Ninth Annual Meeting, held in Philadelphia Pa., May 7, 8 and 9, 1908.

(Concluded from No. 19, p. 624.)

Dr. Robert T. Morris, New York, spoke on

SOME COMMONLY OVERLOOKED CAUSES FOR STOMACH AND BOWEL DISTURBANCES.

He said that in the appendix vermiformis we had a degenerating organ which disappeared in two ways: first, by acute infection ((explosive appendicitis), and, second, by fibroid degeneration. The latter condition was the common *single* cause of chronic intestinal dyspepsia and he believed that by far the greater number of cases of this affection were due to it. While the cases of explosive appendicitis were recognized by all, those of fibroid degeneration of the appendix were commonly overlooked. In the acute infection, the stomach and bowel disturbances set up at once attracted attention, but the adhesions remaining and the subsequent results of the inflammation often escaped notice. In the second variety of cases, the fibroid, the appendix underwent a process of involution. It was significant, however, that while the other tissues gradually wasted away, the nerve filaments always remained intact. This persistance of nerve filaments was the key to the situation. These filaments became entrapped, new cells formed around them and the abdominal sympathic ganglia were finally affected. Of late years he had made a careful study of the subject, and this was the conclusion at which he had arrived. The result of the condition he described was an intractable intestinal dyspepsia. This was an irritative affection, and not an infection. The speaker presented five appendices, all of which he had removed from patients suffering from intractable indigestion, and the specimens were in various stages of involution. By appendectomy he had not infrequently been able to completely cure, in ten minutes, cases which had lasted for many years. Senn was the first to call attention to this fibroid degeneration of the appendix, which he called *appendix obliterans*. A less frequent unsuspected cause of chronic indigestion was eye-strain, and he had sometimes had sent to him cases to be operated on for gallstones, appendicitis and other conditions which were readily corrected by the adjustment of proper glasses. In cases of this kind, however, it was a matter of importance to select the right kind of ophthalmologist to refer the patient to. Another cause was bile-duct adhesions, but he said he would not dwell upon this subject as he had made a previous communication to the society in regard to it. Still another was loose kidney. Here it required much discrimination to decide which cases were suitable for operation and which were not. As to the matter of diagnosis, we had a pair of points in the abdomen which he had found of the greatest possible assistance. If pressure over both the right and left lumbar ganglia elicited tenderness, it was to be inferred that the origin of trouble was located in the pelvis, some condition of the oviduct, or perhaps a hernia or hemorrhoids. If, however, only the right lumbar ganglia were sensitive in palpation, the trouble was in the appendix, and this fact he had tested in many instances. If neither the right nor the left ganglia were sensitive, we must look *above* for the source of irritation, as to the bile ducts, etc.

Dr. R. W. Wilcox, New York, read a paper

THYMIC OPOTHERAPY.

Dr. E. H. Grandin, New York, read a paper on

THERAPEUTIC MEASURES OF VALUE IN CONVALESCENCE FROM ABDOMINAL AND PELVIC OPERATIONS.

Other things being equal, he said, the greatest success would be achieved by the surgeon who conducted his patient through convalescence with a maximum of common sense and a minimum of drug. Much depended on whether the operation had been one of election or of the emergency type. The vomiting following operations was one of the means nature employed for getting the excess of ether out of the system. He allowed his patient as much water as desired, and if it was not retained, the stomach was washed out; so that frequently it was unnecessary to resort to lavage. He forbade the use of ice and the various drugs recommended as anti-emetics, as they had all failed him. If nausea and vomiting continued for twenty-four hours, lavage was indicated. As soon as these symptoms were in abeyance he allowed broths or kumyss, but never milk, on account of the danger of tympanites from intestinal fermentation. The best remedy against shock was a full dose of morphine, given hypodermatically, and this drug was very useful in differentiating nervous shock from that due to hemorrhage; for if the symptoms did not yield to the morphine, internal hemorrhage could usually be inferred. This was the only condition in which he ever used opium or any of its derivatives, with the exception of codeine, which in 2 gr. suppositories he had found very efficient in relieving pain. Thirst was alleviated by the instillation into the bowel of sterile salt solution at a temperature of 110°. Suppression or insufficiency of urine was best met by the continuous irrigation of the bowel with hot salt solution. When the pulse and temperature indicated the presence of inflammation, the application of the ice bag or coil was employed in association with frequent alcohol sponging. If the skin were very dry and the kidneys not working properly, the old formula, aconite, ammonium acetate, and spirit of nitrous ether, was of great value. When the presence of infection was shown by a pulse rapid in proportion to the temperature, he gave alcohol freely and endeavored to support the system in other ways, such as by enteroclysis or hypodermoclysis. The caffeine salts given hypodermatically were useful stimulants, and if the heart flagged, digitalis (preferably in infusion) or sparteine was employed. When the tension pulse was noted, nitroglycerin, in the form of the official solution, was given hypodermatically in full doses, and with the full, bounding pulse, he resorted to venesection. Only occasionally he made use of strychnine, but when he did so, it was in doses of 1-20 gr. every three hours. For such drugs as were indicated he selected the hypodermatic or the rectal route, as the stomach was required for nourishment. When this organ was irritable, it was irrational to place either food or drink in it. Having referred to the general care of the bowels, he said that in obstinate or torpid intestinal tract, ileus having been differentiated, a pint of ordinary coal oil, thrown high up, frequently acted like magic. In beginning tympanites which he considered due to spasm, hyoscine hydrobromide was his sheet anchor. Hyoscine was of service also in allaying cerebral excitement. When congestion was present, and ice cloths did not suffice, he gave sodium bromide. Hydrated chloral was the most reliable hypnotic. After operations it was of advantage to have the patient change his position frequently, provided this was not contraindicated by the pulse. It was now more than ten years since he had tolerated the so-called abdominal supporter, as the bandage weakened the muscles, which needed action in order to become strong.

Dr. O. T. Osborne, New Haven, read a paper on

GOUT, A DISEASE OF METABOLISM; ITS TREATMENT.

After reviewing our knowledge of the digestive end-products and some of the causes and results of imperfect metabolism, he said that instead of wasting a great deal of time on the various theories advanced as to the etiology of gout, it seemed that gout might be defined as a non-infectious, aseptic disease, due to a disturbance of the transformation of the protein food molecule, more especially the purin molecule, into the excretion end-product. There was nothing in this assumption to diminish the importance of the predisposing causes of the disease. As there was no one cause of gout, so there was no one way to treat it. To properly manage it we must (1) carefully study the functions of each organ; (2) know the kinds and amounts of food ingested, and how well it is excreted — especially how the nitrogen in the urine is excreted: how much urea, how much uric acid; (3) arrange the food and liquids ingested to meet the defects discovered in the functioning of the organs and in the deficiencies in the excretions; (4) treat or modify all complications present. In exacerbations of gout, with more or less pain, we had yet to find a treatment more efficient than a calomel purge, saline laxatives, salicylic acid, and some form of colchicum.

Dr. L. Kolipinski, Washington, D. C., read a paper entitled

FURTHER OBSERVATIONS ON THE USES OF CHROMIUM SULPHATE IN MEDICINE.

The most striking feature of the paper was the remarkable results which the author claimed for this drug in the treatment of tabes. Other conditions in which he said he had found it of great service were preputial herpes, enlarged prostate in old men and uterine fibroids, particularly in young women.

Dr. L. Webster Fox, Philadelphia, read a paper on

THE VALUE OF MORPHINE DERIVATIONS IN OCULAR THERAPEUTICS.

Of the newer salts of morphine, ethyl morphine hydrochloride (dionin) was the only one, he said, which had proved of value in ophthalmic practice. The conditions in which it was of the greatest service were painful acute iritis and irido-cyclitis, where, combined with atropine, it assisted in breaking synechiæ and relieving pain. In regard to the results experienced in the use of the other morphine derivatives he was not yet prepared to report.

Dr. A. W. Crane, Kalamazoo, Mich., reported

A SIMPLIFIED METHOD OF ESTIMATING THE OPSONIC INDEX.

In connection with the paper he demonstrated a new thermostat and a pipette rotated by clock-work.

Dr. N. Gildersleeve, Philadelphia, read a paper on

THE STATUS OF OPSONIC THERAPY

which was discussed by Dr. A. P. Hitchens, Philadelphia, who said there was nothing in the whole realm of therapeutics which required more ingenuity and painstaking care than vaccine therapy, to practice which involved going into nearly every method of treatment. These were of value in assisting the opsonins, even after vaccination, if the proper bacterium had been found and the focus of infection determined. The simple injection of vaccines was not by any means the only thing necessary. If by injecting the vaccines we raised the opsonic index, if that better quality of lymph or serum could not get to the focus, our injections would do no good. One point to be emphasized was that the vaccine should be used in very minute doses. The large doses of tuberculin formerly given, and of prophylactic and typhoid vaccine employed during the South African War, had all been shown by Wright to be unnecessary.

Dr. J. F. Schamberg, Philadelphia, spoke of his experience with the vaccines in diseases of the skin, and expressed the opinion that in refractory cases of furunculosis and carbunculosis, this method constituted the best treatment.

Dr. J. Madison Taylor, Philadelphia, read a paper on

THE RATIONAL TREATMENT OF THE VISCEROPTOSIA.

He stated that the testimony was convincing that the causes of misplacements of the great organs lie far back in constitutional weaknesses, general or local; and hence the treatment must be directed to a radical re-invigoration of the body, as well as such parts as were affected. Contributory causes, while important, were but secondary. Surgical operation could and did ameliorate the local conditions, but much more remained to be done when the best that could be done in this way had been accomplished. It was frequently necessary to begin with a period of absolute or partial rest treatment. Dietetics and attention to the digestive organs were important, but the cultivation of omental fat was a fallacy. Replacement of the affected organs required much persistent attention, and this was possible only by the physician himself, however much secondary aid was had of masseurs, etc. Massage, general or abdominal, was capable of large harm as well as good, and demanded personal attention and supervision. Posture or educative attitudes was frequently necessary. Development of the abdominal supports was a matter which demanded attention from start to finish, as success or failure depended on whether this was accomplished or not. The only artificial support for the viscera which gave satisfaction was the belt devised by Dr. Morris Longstreth, which exerted support upward to the torso without making undue pressure on the soft structures of the lumbar region or encircling the abdomen. Finally, the radical measure recommended was manual treatment of the visceromotor centers in the paravertebral region, by means of which essential gains might be secured in nutrition of the relaxed structures and the whole organism.

Dr. A. E. Gallant, New York, said that since 1898, in endeavoring to meet the requirements of the class of patients under consideration, he had practised the following measures: (1) The replacement of the viscera to their normal relation with the diaphragm by placing the patient on her back, with the legs flexed and hips raised, and at the same time stroking the abdominal wall upward. (2) While she was still in this position the adjustment of a corset so constructed as to afford support without compression.

Dr. J. F. Schamberg, Philadelphia, read a paper on

THE ABUSE OF ARSENIC IN THE TREATMENT OF DISEASES OF THE SKIN, AND THE DELETERIOUS RESULTS THAT MAY OCCUR FROM ITS INJUDICIOUS EMPLOYMENT.

Among the deleterious results referred to were general pigmentation and cancer of the skin. In view of such conditions being caused at times, arsenic, he said, should not be employed except for a good reason. Moreover, its use should not be kept up for too long a period, and, in order to prevent this, patients should be strictly forbidden to have prescriptions containing the drug renewed.

Dr. Robert Reyburn, Washington, D. C., read a paper on

CHRONIC NEURALGIA: ITS CAUSE AND CURE.

The one great cause, he thought, was increased blood-pressure. Among the remedies which were most efficient were quinine and ergot in full doses; while in some instances he had found diastic purgatives and the removal of blood by leeches of great assistance.

Saturday, May 9.

Dr. W. E. Robertson, Philadelphia, read a paper on

DIGITALIS AND ITS CONGENERS, WITH SPECIAL REFERENCE TO THE HARMFUL EFFECTS OF DIGITALIS.

It was largely devoted to a plea for the less indiscriminate use of digitalis and the desirability of substituting squill for it in a considerable proportion of cases. In squill, he said, he had found a safer drug, without the disadvantages of digitalis, and one which was at the same time more prompt and powerful.

SYMPOSIUM ON ROENTGEN-RAY THERAPY.

This was opened by **Dr. R. H. Boggs**, Pittsburg, Pa., with a paper on

THE TREATMENT OF SKIN DISEASES.

He said the physiological actions of the x-ray indicated rather a wide field of utility for it in dermatology, and explained from the various changes which took place in living tissues when radiated how this agent was of service in removing hair permanently, as in hypertrichosis; or temporarily, as in sycosis, favus, etc., and in the treatment of lupus vulgaris, of indurated inflammatory diseases, like lichen planus and psoriasis; of diseased cell conditions like epithelioma, mycoides, etc.; of itching dermatoses, like eczema and prurigo, and of keloid, by inhibiting the degenerative cell development, stimulating normal processes and promoting absorption.

Dr. G. C. Johnston, Pittsburg, read a paper on

THE ROENTGEN TREATMENT OF TUBERCULAR GLANDS.

This treatment, he said, had little or no bactericidal action, but the result of the continued application of the rays was a definite histological change so that the glands markedly diminished in size, became transformed into sterilized innocuous fibromata, while the lymphatic trunks were reduced to mere threads. Such a glandular chain was not liable to or susceptible of infection. With this agent it was possible to treat areas of far greater extent than could be explored surgically, while observation of the effect produced in distant organs, as a result of the radiation treatment of infected areas, justified the surmise that the generation of a compound or compounds allied in action to the antibodies was caused by it. He did not wish to be understood as condemning the surgical treatment of tubercular adenitis, but his opinion was that the statistics of surgical treatment of this affection would be much better than they were now if the surgeon would select for operation those cases which were suitable surgical material. In the proper class of cases the ideal treatment, aside from the inevitable scar (merely a cosmetic consideration) was extirpation; but extensive dissection of the neck in the futile attempt to remove all glandular structures he did not believe advisable. Six years' observation of the Roentgen treatment had convinced him of its efficiency, painlessness, safety, cosmetic effect, and permanency of results. It was no longer an experiment, and the operator was now able to state definitely, upon examination of the patient, what the results of treatment would be and how long their accomplishment would require.

THE ROENTGEN TREATMENT OF SARCOMA.

This paper was by **Dr. G. E. Pfahler**, Philadelphia, who stated that out of 22 cases reported by him at the meeting of the American Roentgen Ray Society in October last, 13 were apparently well, and 11 of these had been well for from one to five years. To this list he now added 6 new cases, in which the results, while gratifying, were on the whole less satisfactory than in the previous group. The cases thus far treated were too few to give statistics of any real value, but when these cases were studied in detail, and it was realized that nearly all were inoperable or recurrent after operation, it must be concluded that the results were better than from any other method. In the class of cases usually treated by radiation the administration of Coley's toxins was the only other method which bore comparison, and Coley claimed 11% of recoveries. Fortunately, operation, Roentgenization and the use of the toxins could be combined, and when two or three of these methods were employed conjointly the results would probably be most satisfactory. In operable cases the method of selection was subcapsular enucleation or excision, followed by a course of radiation. Good technic, he said, was essential to good results from Roentgenization, as in any other special field of work, and a portion of the paper, which was illustrated by many fine lantern slides, was devoted to the matter of technic.

POST-OPERATIVE TREATMENT OF MALIGNANT DISEASE

In this paper DR. E. G. WILLIAMS, Richmond, Va., said that on account of the number of recurrences of cancer after operation it was fair to assume that some of the malignant cells had been left. Here the Roentgen rays were of great service, and if there should still be recurrences, the treatment should be repeated until all vestiges of the disease had been destroyed. The many cases of complete recovery under this treatment now on record furnished proof that all the malignant cells had been reached. If the distance of the cancerous growth from the surface was very great, or if bony structures like the sternum intervened, some of the cells would probably be left. There was, therefore, what might be termed a successful zone for Roentgenization, and this might vary according to circumstances. In order that radiation treatment should be efficient it was necessary that sufficient doses should be given within a certain time. Small doses at comparatively rare intervals were quite inadequate.

DR. W. L. RODMAN, Philadelphia, said he had seen the best results follow the use of the x-rays in superficial squamous epithelioma, and also very good results in sarcoma. In carcinoma of the breast, however, although he had had a large experience in cases which had been submitted to the x-rays, always after operation, he could not say that a single one of them had been benefited in the least by such treatment.

DR. SAJOUS thought that results in malignant disease would be helped if the treatment were not limited to one procedure, either surgery or x-ray, and if, in addition, the auto-protective resources of the body were called into requisition. Personally he had had cases, in patients who refused operation, where the internal secretions alone had proved of value, their use being followed by the disappearance of glands in the axilla, etc. Judicious internal medication, he believed, would prove of very great service as an aid to surgical or radiation treatment.

PALLIATIVE TREATMENT OF MALIGNANT DISEASE BY ROENTGEN RAYS.

DR. C. L. LEONARD, Philadelphia, said that an increase in the number of early operations, and a consequent decrease in the mortality from malignant disease, could best be secured by a careful discrimination in the cases selected for operation and by the candid admission that in advanced cases operation was only palliative. The inability to cope with the disease in its later stages was evident, and the combination of anti- and post-operative Roentgen treatment with radical operation, as well as the results obtained from the Roentgen treatment of recurrent growths, pointed to this combination as a method of decreasing the high mortality and increasing the extent of palliation. The increased palliation afforded by the combined treatment should undoubtedly be given to the 66% of these cases presenting themselves too late for anything but palliation, while a decrease in the mortality in all cases would certainly follow the systematic employment of the Roentgen rays after operation. This treatment should forestall, rather than wait for, recurrence. The palliation afforded by radiation was seen in the relief of pain, so that opiates were rendered unnecessary. In addition, it localized the disease by destroying the lymphatics, healed superficial ulcerations, thus making life comfortable, and, where the lymphatic involvement was already too deep, permitted the patient to die in comfort from visceral metastases.

DR. W. B. COLEY, New York, said that he considered the present data insufficient to permit of a final decision as to the value of pre-operative or post-operative radiation in malignant disease. In tumors, in the early stages, in which operation alone promised reasonable hope of success, he believed there were certain dangers connected with the pre-operative use of the x-ray. In these cases it was possible that while the tumor itself showed diminution in size under radiation, there might be insidious glandular extension which lessened the chances of a final cure. Furthermore, after the tumor had diminished considerably during this treatment there was a probability that when the operation was performed, smaller incisions would be made and insufficient tissue removed. On the other hand, there were cases where operation and radiation were both used as palliative measures in which the x-ray treatment might render a mass sufficiently small to permit of surgical removal which, at the outset, it would have been unwise to attempt. There was much more to be said in favor of the post-operative x-ray treatment, and at present the weight of opinion appeared to be decidedly affirmative as to the value of such treatment. In spite of this, however, he did not believe that there had been a sufficient number of cases carefully treated and more carefully reported, covering a period of three years after operation, to justify any conclusions of value.

DR. H. K. PANCOAST, Philadelphia, read a paper on

THE TREATMENT OF LEUKEMIA BY THE ROENTGEN RAYS

which was principally devoted to a consideration of a new method of applying the x-ray in this disease which had been described recently in a preliminary report by Dr. Stengel and himself published in the *Journal of the American Medical Association*. The essential feature of this method, which was suggested by Dr. Engel in December, 1906, is the direction of the applications to the bone marrow of practically the entire skeleton, as the primary object in the treatment, and the relegation of splenic and glandular exposures to a position of minor or secondary importance. The speaker claimed that the method was more rational than the older one, and superior in every way. Thus, it implied a much more direct attack against the cause of the disease, and clinical experience had shown that the secondary manifestations, such as the splenic and glandular enlargements, responded even more satisfactorily to the treatment. (The technic included, however, an appropriate amount of direct exposure of these structures.) Again, the dangers particularly associated with the x-ray treatment of leukemia were in a large measure avoided, and several other important but less significant advantages had been noted clinically. Regarding the prognosis, it was as yet too early to prophesy as to ultimate results under this plan of treatment, but, as the matter now stood, we were in a much better position to settle the question whether a permanent cure can ever be attained directly from x-ray treatment, because we were bringing our forces to bear more directly upon the cause of the disease. At all events, the expectation of life was undoubtedly longer under this new method.

COMMITTEE ON THERAPEUTIC RESEARCH.

On the recommendation of the Council, a Committee on Therapeutic Research was appointed, in accordance with the suggestion made by Professor Remington in his address. This committee, which is to be a permanent one, was constituted as follows: T. E. Satterthwaite, New York, chairman; H. C. Wood, Jr., Philadelphia, Secretary; F. H. Gerrish, Portland, Me; J. V. Shoemaker, Philadelphia; O. T. Osborne, New Haven, Conn. The number of its members may be increased to fifteen if this should at any time be recommended by the Council, the additional members to be appointed by the Chairman of the Council. It was specified that the work of the committee shall be limited exclusively to the investigation of the value and uses of pharmacopeial drugs.

OFFICERS FOR 1909.

The following officers were elected: President, F. H. Gerrish, Portland, Me.; First Vice-President, A. D. Blackader, Montreal; Second Vice-President, H. Van Rensellaer, Albany, N. Y.; Third Vice-President, R. T. Morris, New York; Secretary, N. P. Barnes, Washington, D. C.; Treasurer, A. E. Gallant, New York; Chairman of the Council, R. W. Wilcox, New York; Vice-Chairman, E. D. Fisher, New York.

Book Reviews.

Green's Encyclopedia and Dictionary of Medicine and Surgery. Vols. VI, VII, VIII and IX. Edinburgh and London: William Green & Sons. Chicago: W. T. Keener.

Volume VI of this encyclopedia, which we have favorably reviewed in its earlier volumes, contains articles from L to N inclusive, and includes among its writers many men of much distinction, among whom Gulland, Ballantyne and Osler are conspicuous. Dr. Ballantyne has contributed all the short paragraphs and most of the articles less than a thousand words in length and is responsible for the whole system of cross referencing, which constitutes one of the values of the book. Volume VII takes the subject matter through the letter N and into the letter P. The articles are of the same general character as in previous volumes. The VIII and IX volumes carry the material into letter T. Every effort has been made to incorporate the most recent advances in the various departments of medicine in spite of necessarily limited space. There is but one further volume to complete the work. In this the editor hopes to be able to announce the approximate date of publication of the " Quinquennium of Medicine," which will serve as a supplementary volume, both to this encyclopedia and to the " Encyclopedia Medica."

Text Book of Physiological Chemistry in Thirty Lectures. By Emil Abderhalden, O. Professor für Physiologie des Physiologischen Instituts der Tierarztlichen Hochschule Berlin und Universitats-Professor. Translated by William T. Hall, Instructor in Chemistry, Massachusetts Institute of Technology, and George Defren. First edition. New York: John Wiley & Sons. 1908.

This is a comprehensive volume of more than seven hundred pages, and, as the title states, is devoted to thirty lectures given by Professor Abderhalden. The work is in no sense a laboratory guide, but it deals largely with the theoretical side of physiological chemistry; it is not intended, however, to embrace all the result of physiological-chemical investigation.

The reviewer is not favorably impressed with the work as a textbook for the average medical student. It will no doubt be found valuable for reference and for advanced students of physiological and biological chemistry. There is an excellent bibliography. A word of praise is due the translators, not only for the excellent translation of the German text, but also for their good judgment in placing this volume within the reach of the American student.

Operative Midwifery. By J. M. Munro Kerr, M.B., C.M. (Glas.), Fellow of the Faculty of Physicians and Surgeons, Glasgow; Obstetric Physician, Glasgow Maternity Hospital; Gynecologist, Western Infirmary; President of the Glasgow Obstetrical and Gynecological Society; Late Assistant to the Regius Professor of Midwifery, Glasgow University. With 294 illustrations in the text. Pp. 705. New York: William Wood & Co. 1908.

This book is patterned on Robert Barnes' " Lectures on Obstetric Operations." It represents the experience of the author and is written in a colloquial style, though with a lack of that clearness of diction which is characteristic of the best English textbooks. It is essentially a book for the elementary student of obstetrics rather than the advanced student and the practitioner. The illustrations of the pathological specimens are uncommonly bad, the rest are fairly well executed, the paper is of good quality, as is the printing, but the binding is poor.

Gynecology and Abdominal Surgery. Edited by Howard A. Kelly, M.D., F.R.C.S. (Hon. Edin.), Professor of Gynecologic Surgery at the Johns Hopkins University; Gynecologist to the Johns Hopkins Hospital, Baltimore; and Charles P. Noble, M.D., Clinical Professor of Gynecology at the Woman's Medical College, Philadelphia; Surgeon-in-Chief, Kensington Hospital for Women, Philadelphia. Illustrated by Hermann Becker, Max Broedel and others. Two volumes of 851 and 862 pages. Philadelphia and London: W. B. Saunders Company. 1908.

This is a system book of two large volumes, the names of 31 authors appearing on the title page. In this day of ponderous textbooks one is not surprised to find that the two volumes weigh twelve and a half pounds. Of the 31 authors, 16 contribute 25 chapters to the first volume, and 20 authors, 21 chapters to the second. The faults of a system book are manifest in this work as in all books made up of a series of essays from many different pens, but there is to be noted less of a disjointed character and less overlapping in the first than in the second volume. Perhaps this is due to the fact that the editors have written a whole or a part of twelve of the chapters of the first volume, and of only four in the second.

Volume I contains many excellent articles, notably those on the Pathology of the Reproductive Organs, by Elizabeth Hurdon; Operations before Puberty, by the same author and H. A. Kelly; Conservative Operations on the Tubes and Ovaries, by Kelly; Operations for Retrodisplacements and Prolapse of the Uterus, by Noble. Four chapters on Vaginal Operations, well written and well illustrated, one each by H. T. Byford, F. Henrotin, Kelly and Noble, might have been condensed to advantage into one chapter. As it is, the chapters are scattered promiscuously through the last half of the book. Another instance of lack of orderly arrangement is a comprehensive and carefully-written chapter of 78 pages on Complications following Operations by G. Brown Miller, which is placed in the second volume instead of in the first, where the general principles of operative measures are treated.

A long chapter of 118 pages on Medical Gynecology by Noble and B. M. Anspach is one of the features of the book of which the editors are proud, judging by the preface. To the reviewer a good deal of it savors of mediocrity, although portions, such as the Care of Patients after they have Passed from the Surgeon's Hands, are to be highly recommended.

Almost all the illustrations in this volume are by Becker. They are both numerous and good.

Volume II, published a year after Volume I, shows a greater need of editorial condensation and elimination of duplication, notably in the chapter on the Surgery of the Pancreas by E. L. Opie, with its section on Surgical Treatment of Diseases of the Pancreas, by Stephen H. Watts; also in the chapter on Hernia, by G. L. Hunner, with that on Operations for Inguinal Hernia, by Edward Martin. The volume contains a good chapter on Operations during Pregnancy, by R. C. Norris, embodying much fresh matter and showing excellent judgment. The chapter on Extra-Uterine Pregnancy, by J. Whitridge Williams, is one of the best articles on the subject in the English language. Diseases of the Female Breast, by J. C. Bloodgood, represents a clinical and pathologic study of 1,048 lesions in the surgical pathological laboratory of the Johns Hopkins Hospital. The author's English is lacking in clearness in places, especially in the description of technic, nevertheless, the article is admirable, as are also Operations upon the Gall Bladder, Bile Ducts and Liver, by A. J. Ochsner; and Operations upon the Stomach, by B. G. A. Moynihan.

The illustrations by Becker and Broedel are especially satisfactory in Moynihan's essay and the appended section on Pyloroplasty by J. M. T. Finney. J. B. Murphy's 133 pages of Intestinal Surgery is an exhaustive, well-illustrated presentation of the subject, and other good sections are Tuberculosis of the Peritoneum, by George Ben Johnston; Operations for Diseases of the Vermiform Appendix, by Kelly and Hurdon, a résumé of the large monograph by the same authors with new figures; and the Surgery of the Urethra and Kidney, by Kelly, Noble and Anspach, embodying some of Broedel's work on the kidney.

Lack of space forbids further notice of the many excellent features of these volumes. Each has a full and complete index.

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THE CURATIVE ACTION OF LEUCOCYTE EXTRACTS IN INFECTIONS.

There is appearing this week in the *Journal of Medical Research* (vol. xix, no. 3) a series of papers which is sure to attract attention. It consists of experimental and clinical studies on the curative action of leucocyte extracts in infections by Dr. Philip Hanson Hiss and Dr. Hans Zinsser, of the College of Physicians and Surgeons of New York. These papers deal first with the theories and facts of infection and immunity, and show how, as the result of the discussion of the subject, with deductions from personally observed facts, Dr. Hiss was led to conclude that certain infections which have heretofore resisted attempts at specific treatment might be attacked in a way different from any heretofore employed.

In this belief work has been done on staphylococcus, typhoid, pneumococcus, streptococcus and meningococcus infections experimentally induced in animals. The agent used is a watery extract of the leucocytes of healthy animals (rabbits) or of animals made immune to the particular infection being tested. The results of this treatment were so satisfactory that further work was carried on: in the study of the precipitation of bacterial extracts by extracts of leucocytes and an attempt at an elucidation of the method of protection by leucocyte extracts on the one hand, and on the other in the practical testing of the effect of such extracts of leucocytes in similar infections in man.

So far as published, these latter deal with a series of cases of epidemic meningitis and of lobar pneumonia treated in various hospitals in New York with encouraging results. We are informed that similar work has already been done in typhoid fever and staphylococcus and streptococcus infections in man with similar encouraging results, and the clinical details will be published in the near future.

A study of the temperature charts accompanying these articles shows the marked influence of the leucocyte extracts, as indicated by rapid falls in temperature. The clinical symptoms are given in full and support the graphic evidence furnished by the temperature curves in showing marked, if sometimes temporary, improvement in the cases.

The preparation of the extracts is given as follows: "The leucocytes have been obtained for the most part by double pleural inoculations with aleuronat, and the amount obtained after twenty-four hours from a rabbit has varied from thirty to sixty cubic centimeters of turbid fluid. This has been quickly centrifugalized and the serum decanted. The cells are then at times washed in normal NaCL solution, or directly subjected to the extracting fluid, which is added in amounts about equal to the fluid poured off. It is evident that the extracts must vary in strength, as there is no means by which they can be exactly standardized, principally on account of the red blood cells which are often present in the exudates. . . . In most instances not only the clear supernatant fluid has been injected into animals, but also the cell residue, which may easily be emulsified by shaking. We have done this so that the animal will have the benefit of all the cell products, since our methods of extraction are as yet too crude for us to feel certain that all the active substances are freed from the cell by them."

Referring to certain specific observations in his laboratory in the early part of 1907, Dr. Hiss writes as follows:

"In thinking over this work, I came to the conclusion that in many diseases we are probably dealing with an immunity a large part of whose mechanism is individually cellular, not only in the sense of phagocytosis and digestion, but in the neutralization of poisons given rise to by the disintegration of the bacteria — a mechanism in which the protecting cells *must* intervene, and, unaided by the bodies in the plasma, neutralize within themselves the poisonous products of the micro-organisms."

Petterson and others who have heretofore employed leucocyte extracts have been especially interested in working out their direct destructive action upon bacteria. The work of Dr. Hiss, on the other hand, has had as its immediate purpose the determination of the curative effects of such extracts, the best methods of extracting and the most available animals to use for material, not only as to supply and ease of handling, but as to the character of the extract obtained.

The particular point of interest in these papers is that they furnish a new point of attack and give promise of results not heretofore obtainable. If the clinical results indicated are borne out by further experimentation, it appears probable that there is here opened a new phase of the struggle against the group of infections in which non-soluble toxic substances are produced.

In any case, the modesty with which the results are stated, and the clearness with which the deductions are drawn, are subjects for hearty congratulation.

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MEDICAL LICENSE EXAMINATIONS.

The stricture is not infrequently made that the modern education of the physician gives more attention to the theoretical than to the practical branches of knowledge. A consequence of this is a neglect of practical examinations, not only for entrance to hospitals, but later, and more important, for entrance on the actual practice of medicine. The question, therefore, presents itself as to whether the character of the medical license examination is the best that can be devised, and whether it serves as a fair criterion of a candidate's ability to practise medicine.

Among the deliberations of the Council on Medical Education of the American Medical Association, at the last annual meeting, this of medical license examinations was discussed at very considerable length. One of the effects of the general raising of the standard of medical education, and one of its causes as well, has been the demand on the part of various states for a preliminary examination of fitness much after the manner of the bar examination preliminary to the practice of law. The laws as yet present no uniformity and the relations between the states in regard to the requirements for medical practice naturally differ widely. Uniformity is desirable, and with this should go a more systematic and practical examination than has as yet been introduced.

One of the most important contributions to the general discussion, at the meeting to which we have referred, was by Dr. W. T. Councilman, of the Harvard Medical School. In presenting his remarks Dr. Councilman drew attention to the importance of preliminary scientific training before entrance to the medical school, and pointed out the extraordinary advances which have been made in the last thirty years, particularly along lines of accurate observation. How much credit is to be attributed to external agencies — among which the work of the examining boards must be regarded as important — in this progress and in the general improvement of our medical schools, and how much to the development of forces acting within the schools themselves, is perhaps an open question. The important fact is that laboratories have been erected, that the clinic and laboratory are coming into closer and closer union, and above all that the student is being taught methods of acquiring knowledge as well as mere facts. It is certainly true that our best medical schools are training men in this way and that book knowledge as such is coming to occupy a less and less conspicuous position. We believe, therefore, that the criticism at times heard of the failure of our best medical schools to produce practical men is unfounded.

Dr. Councilman very properly raises the query as to whether the knowledge thus acquired by the student is properly tested by the state examining boards. This query he answers strongly in the negative. A study of the examinations given by these boards leads him to the definite conclusion that the ordinary questions asked are inadequate as a real test of practical knowledge, although the questions as a rule are well selected and their correct answers demand a considerable fund of information. In general, he thinks the written examination has distinct limitations and that so long as it alone is demanded, a real knowledge of the physician's capacity to practice medicine will not and cannot be attained. As a remedy for this state of affairs he suggests that means be taken to determine the power a man has acquired to use his theoretical knowledge, and that to this end the examination should be made practical. The natural difficulties which such a practical examination would entail he thinks are easily surmountable. Examinations in anatomy, physiology, bacteriology, pathology, medical chemistry and in clinical laboratory methods could be easily secured in any city or town where there are laboratories, which could be placed at the service of the medical examiners. It is far more important, for example, that a man should be able to demonstrate tubercle bacilli in a fluid, or make an actual blood examination, than to describe merely how such examinations are made. A more difficult question is the means of providing practical clinical examinations, but this likewise could be secured in very many departments of medicine through the use of ambulant patients connected with dispensaries, and possibly by the use of certain hospital wards. Should such practical examinations be required as a preliminary to the practice of medicine, Dr. Councilman believes that the medical schools would also be the gainers in the demand made upon them to further use practical and laboratory methods in clinical teaching. Finally he says that this idea is not new, that it has been in use both in England and on the Continent, and that its general introduction into the United States would be a distinct step in progress. The others who spoke at the meeting made various excellent suggestions, but of somewhat less radical character than those of Dr. Councilman. Dr. F. F. Wesbrook, of the University of Minnesota, expressed essentially the same opinions regarding the value of a practical examination.

We are in entire accord with Dr. Councilman's views on this subject. Under the present regulations it is not to be questioned that many wholly incompetent men, after passing perhaps excellent examinations, are permitted to enter upon the practice of medicine with the full sanction of the state authorities. This should be prevented at the earliest possible moment, and the only feasible method seems to be that outlined by Dr. Councilman, Dr. Wesbrook and others, of finding out what a candidate can do, as well as determining what he knows. Should such examinations be demanded, it would require preliminary practical training in the nature of hospital service or equivalent work, as well as adequate laboratory instruction, before a candidate would venture to present himself before the examining board. At present it is possible to prepare for these examinations through the use of books alone. A ponderous volume has recently been published giving the questions of examining boards with their answers, a glance at which certainly demonstrates the wide field covered, but also in very striking fashion the unpracticality of the method. It is certainly most strongly to be hoped that the suggestions made at this meeting bear some fruit and that forthwith our state examiners introduce a practical examination along with the other, even if in but a few subjects. A complete change of the type of examination is perhaps not immediately to be expected, but we are convinced if a beginning in this direction were made, that the greater usefulness of such examinations would be demonstrated and that we should then take our place along with England and the Continent of Europe in demanding a qualification which really qualifies for the practice of medicine.

BETTER SALARIES FOR OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

For several years the American Medical Association has advocated the establishment of a National Department of Public Health, and recently this movement has taken a more concrete form through the united efforts of that Association, the American Public Health Association and the Committee of One Hundred of the American Association for the Advancement of Science. No one who has given the subject serious thought doubts the necessity for such a department, but the problem is tremendously complicated by the lack of constitutional authority for federal interference with the health powers of the various states.

There is at present a Bureau of Public Health which has proved its merit and ability in many a hard-fought battle with pestilential disease, notably in the New Orleans yellow-fever epidemic of 1905 and the bubonic plague campaign which is now drawing to such a successful close in San Francisco. Until such time as the establishment of a great public health department can be brought about, these functions must be discharged by that Bureau, and it is, therefore, imperative that it be strengthened and assisted in every way if its efficiency is to be maintained at the standard which the preservation of the public health demands.

The last session of Congress closed without enacting a bill which had already passed the Senate, placing the salaries of the officers of the United States Public Health and Marine-Hospital Service on a parity with those of the Army and Navy. Common justice to one hundred and thirty medical men demands the passage of this law.

The founding of a national Department of Health is an affair of the future; this is a crying necessity of the present and should be placed before every Congressman and his aid asked to the end that the men who are conducting the federal health work may receive what is their just due. If the medical profession will act collectively and individually, this may be secured.

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MEDICAL NOTES.

Hydrophobia in Chicago. — A number of cases of hydrophobia have occurred in Chicago, chiefly, it is reported, due to bites by puppies fed by a mother suffering from rabies. A woman is also under treatment at the Pasteur Institute having been bitten by a rabid colt, and three others, bitten by cats.

Subsidence of Cholera at Manila. — It is reported that Manila is practically free of cholera. Since Nov. 1, an average of but one case a day has occurred, and these in outlying districts. The white population has been very slightly affected by the disease, and among 12,000 city school children it is stated that not a single case occurred. In general, the prophylactic measures have been so far developed that a significant outbreak, certainly among the white population, is not to be anticipated in the future. The sanitary condition of Manila is very much better than that of most Oriental cities.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Nov. 10, 1908, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 120, scarlatina 59, typhoid fever 16 measles 17, smallpox 0, tuberculosis 51.

The death-rate of the reported deaths for the week ending Nov. 10, 1908, was 17.78.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Nov. 7, 1908, was 170, against 205 the corresponding week of last year, showing a decrease of 35 deaths and making the death-rate for the week 14.33. Of this number 92 were males and 78 were females; 163 were white and 7 colored; 102 were born in the United States, 65 in foreign countries and 3 unknown; 35 were of American parentage, 103 of foreign parentage and 32 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 115 cases and 5 deaths; scarlatina, 43 cases and 2 deaths; typhoid fever, 15 cases and 2 deaths, measles, 28 cases and 1 death; tuberculosis, 47 cases and 19 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 22; whooping cough 1, heart disease 23, bronchitis 3 and marasmus 6. There were 12 deaths from violent causes. The number of children who died under one year was 39; the number under five years 46. The number of persons who died over sixty years of age was 46. The deaths in public institutions were 61.

Cerebrospinal meningitis, 1 case and 1 death.

Dental Hygiene. — A lecture under the auspices of the Harvard Dental School was given

Nov. 5, at the school building, by Dr. William R. Woodbury, of Boston, on the subject, "Dental Hygiene."

Appointment of Dr. Guy G. Fernald. — Dr. Guy G. Fernald, assistant physician at the McLean Hospital, Waverly, Mass., has been appointed to the position of resident physician of the Massachusetts Reformatory, in the place of Dr. Theodore Chamberlain, of Concord, who has resigned because of stress of other work. Dr. Fernald was born at Wilton, Me., in 1865, and was graduated from Dartmouth College and from the Dartmouth Medical School. He has served as assistant physician of the McLean Hospital for a number of years.

Resignation of Dr. George H. M. Rowe. — Dr. George H. M. Rowe has resigned from the superintendency of the Boston City Hospital, after a service of nearly thirty years. He was appointed June 1, 1879, and had uninterruptedly filled the arduous position up to May of this year. His health then necessitated an interruption of his work, and now, although his health is somewhat restored, he has decided to resign his position. His long period of service has been appreciatively recognized by the Board of Trustees, who point out his untiring efforts in the upbuilding of this great municipal hospital.

Appointment of Dr. John H. McCollom. — Dr. John H. McCollom has been appointed superintendent of the Boston City Hospital in place of Dr. George H. M. Rowe, who has recently resigned. Dr. McCollom has been acting superintendent during Dr. Rowe's leave of absence and comes to this new position well prepared, not only through this fact, but also because he has been superintendent of the South (Contagious) Department of the hospital since its opening. Dr. McCollom is professor of contagious diseases in the Harvard Medical School and is widely known for his work, particularly in this class of diseases, in which he is a recognized authority.

The Boston Medical Library. — The annual meeting of the Boston Medical Library was held Tuesday evening, Nov. 10, at the Library. Reports from the Council, the Treasurer and the Librarian were presented and read. The usual business was transacted and the following officers were elected:

President, Dr. George B. Shattuck; Vice-Presiden , Dr. John L. Hildreth; Librarian, Dr. John W. Farlow; Secretary, Dr. Oliver F. Wadsworth; Treasurer, Dr. William H. Prescott; Members of Committee on Library and Finance, Dr. Morton Prince, Dr. John Warren; Member of Committee on Medical and Social Meetings, Dr. David Cheever; Members of Committee on Membership and Elections, Dr. Richard Dexter, Dr. Louis W. Gilbert.

NEW YORK.

Resignation. — Dr. S. T. Armstrong has resigned the position of superintendent of Bellevue Hospital, which he has occupied since July, 1905.

A Christian Scientist held by Grand Jury. — On Nov. 6, John M. Goodwin, a Christian Scientist, of Mount Vernon, Westchester County, was held for the grand jury by Coroner Philip Van Paten on a charge of manslaughter, and gave bail before Judge Platt in the County Court at White Plains. Goodwin's little daughter, twelve years of age, who died on Oct. 20, was attended by two Eddyite healers, though a physician was called in just before the child's death. The coroner found that her death was due to acute toxemia, the cause of which was not stated.

Montefiore Home and Hospital. — The annual meeting of the board of managers of the Montefiore Home and Hospital for Chronic Invalids was held on Nov. 1. In his address on this occasion the President, Jacob H. Schiff, referred to a request which had been received from the head of the Beth Israel Hospital to the effect that in the admission of patients to the Home preference should be given to those for whom places were applied for by other hospitals. He stated that the managers had only one answer to every such claim upon them, and that was that no favoritism in regard to the admission of a patient would ever be shown, no matter who might recommend the application.

The Brooklyn Water Supply. — In consequence of the Health Department's having issued a report to the effect that the water supply of Brooklyn is now contaminated and unfit for drinking purposes, Dr. Onslow A. Gordon, President of the Medical Society of the County of Kings, on Nov. 7 warned the citizens of the borough against using the water except after it had been boiled. It is stated that the chemist of the Health Department has found that the water contains an excess of chlorides, in consequence of pollution of the reservoirs and interfiltration from the sea. On the other hand, Dr. Daniel D. Jackson, director of the laboratories of the Department of Water Supply, after an examination of the water in the Mount Pleasant Reservoir, has denied that this is unwholesome and asserts that the Health Department's chemist has made a mistake.

Mortality Statistics. — The new record in the statistics of the Health Department, made in June last, has been exceeded by the low death-rate in the month of October, which was 14.26, as against 14.48 in June. The corrected death-rate, excluding non-residents and infants under one week old, was 13.32. In October the death-rate in the city was 14.74 and in November, 1907, 16.20. Among the diseases in which there was a diminished fatality were the following: The weekly average of deaths from typhoid fever declined from 20.75 in October to 17.5 in November; the weekly average from diphtheria and croup, from 23 to 18.75; from epidemic cerebrospinal meningitis, from 5.5 to 4.75; from pulmonary tuberculosis, from 154.5 to 146; from diarrheal diseases, from 204.75 to 116.5; from diarrheals under five years of age, from 194 to 108.5; from apoplexy, congestion and softening of the brain, from 29.25 to 26.75; and from Bright's disease and acute nephritis, from 92.5 to 91.25. Among the diseases in which there was an augmented mortality were the following: The weekly average of deaths from pneumonia increased from 48.75 to 66.5; from bronchopneumonia, from 56.25 to 60.75; from cancer, from 56.5 to 66.75; from organic heart diseases, from 117.25 to 126; and from cirrhosis of the liver, from 17.75 to 20. For the first time since June influenza appears as a cause of death, and two deaths during the month were attributed to it.

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Current Literature.

Medical Record.
Oct. 3, 1908.

1. *Koplik, D. *The Serum Treatment and the Prognosis under Various Forms of Therapy of Cerebrospinal Fever.*
2. Haig, A. *Some Mistakes which may prevent the Best Results of the Uric Acid-Free Diet.*
3. *Deeks, W. E. *Pneumonia on the Isthmus of Panama.*
4. Ringer, P. H. *Early Tuberculosis and Malaria: Their Differentiation.*
5. Stillman, E. R. *Acute Otitis Interna, with Report of a Case.*
6. Davidson, A. J. *Gonorrheal Exostoses of the Os Calcis. Report of a Case complicated by Metatarsalgia.*

1. Koplik gives a comparison of his results in the use of Flexner's serum in cerebrospinal meningitis with the results under the old method of routine lumbar punctures. He describes his treatment and tabulates his results in sporadic cases in 1899 to 1903, and in the epidemic form occurring in 1904 and 1905. He has treated 13 cases with the serum, with 2 deaths. He thinks it would be rather premature and unfair to draw any conclusions as to the serum until we have a larger material, and until we have tried it in an epidemic of the violent type, such as was passed through in 1904 and 1905. On the other hand, he says that the serum of Flexner not only makes a favorable impression, but is certainly a factor which cannot be excluded from the therapy of cerebrospinal meningitis, no matter what our subsequent conclusions may be. It certainly does appear that with the serum, as we perfect it, we may have an improvement in the percentages of recoveries.

3. Deeks reports 574 cases of pneumonia on the Isthmus of Panama. Among his conclusions, two are of special interest: (1) The relation of a sinusitis to his pneumonia cases, and (2) the bad effects of quinine given in large doses in this disease. He puts forward statistical proof, clinical observations and theoretic reasons to support this view. [W. B. R.]

Oct. 10, 1908.

1. Starr, M. A. *The Duties of the Medical Profession to the Public.*
2. Phillips, W. C. *The Present Status of the Radical Mastoid Operation for Cure of Chronic Purulent Otitis Media.*
3. Stockton, G. *Hydrotherapy in the Treatment of the Insane.*
4. Nesbitt, C. T. *A Contribution to the Study of the Diathetic States.*
5. Phillips, J. *Cephalocele, with a Report of Three Cases in One Family.*
6. Peters, L. S. *Treatment of Secondary Anemia of Tuberculosis with Hypodermics of Iron.*

The American Journal of the Medical Sciences.
October, 1908.

1. *James, W. B. *A Clinical Study of Some Arrhythmias of the Heart.*
2. *Cushing, H., and Bordley, J. *Subtemporal Decompression in a Case of Chronic Nephritis with Uremia; with Especial Consideration of the Neuroretinal Lesion.*
3. McKenzie, R. T. *Physical Therapeutics.*
4. *Richardson, M. W. *The Present Status of Serum and Vaccine Therapy.*
5. Smithies, F. *The Paravertebral Triangle of Dullness (Grocco's Sign) in Pregnancy.*
6. Newell, F. S. *The Effect of Overcivilization on Maternity.*
7. *Foulkrod, C. *The Relative Severity of the Different Forms of the Toxemia of Pregnancy and Its Bearing upon the Treatment.*
8. Lebnian, E. *The Occurrence and Significance of Negative Results in Blood-Culture Studies.*
9. Jackson, E. *Suggestions of the Pupil in General Disease.*
10. *Sachs, B. *Raynaud's Disease, Erythromelalgia and the Allied Conditions in Their Relation to Vascular Disease of the Extremities.*
11 *Buerger, L. *Thrombo-Angiitis Obliterans: A Study of the Vascular Lesions leading to Presenile Spontaneous Gangrene.*
12. Talley, J. E. *The Prolonged Use and Toxic Action of Sulphonal.*

1. James' article is based on a report of two cases, the first being one of heart block (with organic lesion at autopsy) without the syncopal attacks of the Stokes-Adams syndrome, and the second a case with periods of slow pulse and syncopal attacks but without true heart block. The slow pulse in this second case was proved by means of cardiograms and venous tracings to be due to abortive extrasystoles originating probably in the auriculo-ventricular bundle. At times this patient reverted to normal conditions and at others there occurred paroxysms of tachycardia. The only syncopal attack that was closely observed was preceded by bradycardia and followed by tachycardia. These cases are reported to illustrate variations from the typical Stokes-Adams syndrome.

2. Cushing and Bordley report a case of chronic interstitial nephritis with high blood pressure and retinal evidences of congestion for which a cerebral decompression was performed with marked temporary improvement of general symptoms and of retinal conditions. The authors point out that this fact lends support to the theory of Traube that manifestations of uremia are due largely to pressure from cerebral edema, and that the so-called albuminuric retinitis is in large part at least a local edema of mechanical origin. They suggest the propriety of further use of permanent decompression in such cases.

4. Richardson reviews the development of serum therapy and discusses its results in a large number of diseases in alphabetical order. In anthrax, Legge has reported 65 cases treated, with but 2 deaths. In cerebrospinal meningitis the results of Flexner in America and of Levy, using a serum prepared by Wassermann in Germany, are striking. In cholera, Haffkins reports success with preventive inoculations, although when the disease is once contracted specific treatment is without influence. The results in diphtheria are well stated. In bacillary dysentery, plague, staphylococcic infections and tetanus, beneficial effects seem fairly well established. Other diseases are discussed, both bacterial, constitutional and toxic, in which some success has been attained. The article is a valuable summary of the work performed by many authors.

7. Foulkrod classifies the toxemias of pregnancy according to the organs chiefly affected, and names them according to their order of severity, from the least to the greatest, as follows: (1) Intestinal, (2) thyroid, (3) parathyroid, (4) fetal, (5) placental, (6) renal, (7) hepatic, (8) rare instances when other glandular structures are at fault. Cases are reported illustrating these various types, in some of which it was thought necessary to induce premature labor. The importance of examination of urine, especially of following the nitrogen output and the relative proportions in this of urea, ammonia and amino-acid nitrogen, is mentioned, but all laboratory methods are considered to be of much less weight than the general observation of the patient's condition.

10. Sachs concludes that erythromelalgia and Raynaud's disease are often associated with one another, and that a sharp line of demarcation cannot always be maintained, since cases may at one time correspond closely to the erythromelalgic type and at another time to the type of Raynaud's disease. He believes that they may well be caused by obliterating endarteritis or angiothrombosis as described by Buerger.

11. Buerger reports the results of examination of eleven lower extremities amputated on account of presenile spontaneous gangrene. In the arteries and veins of these he found extensive obliteration from material within, as well as peri-arteritis and arteriosclerosis. Both gross and microscopic anatomy are clearly described. The obliterating process is traced to a relapsing or recurrent thrombosis. There was no constant change in nerves. The cause of the thrombosis is still undetermined; the syphilitic factor which has been suggested in its etiology is uncertain. [F. W. P.]

Archives of Internal Medicine.

October, 1908.

1. *Jackson, H. C., and Eltings, A. W. *Clinical Notes and Physiochemical Study of Salt Elimination in the Urine of an Individual with General Edema of Obscure Origin, followed by Cure.*
2. *Janeway, T. C., and Mosenthal, H. O. *An Unusual Paroxysmal Syndrome probably allied to Recurrent Vomiting, with a Study of the Nitrogen Metabolism.*
3. *Gilbert, N. C. *Infection of Man by Dipterous Larvæ, with a Report of Four Cases.*
4. *Knox, J. H. M., Jr., and Meakins, J. H. *Ten Urinary Findings in a Series of Infants suffering from Intestinal Infection.*
5. *Morgan, J. D., and Wilkinson, W. W. *Report of Ten Cases of Epidemic Cerebrospinal Meningitis treated with Antimeningitis Serum.*
6. *Loeb, L. M. *The Bacteriology of Acute Rheumatism.*
7. *Beck, H. G., and Stokes, W. R. *A Clinical and Pathologic Study of a Case of Adams-Stokes' Disease.*
8. Herrick, W. W. *Tricuspid Stenosis, with Report of a Case.*
9. Pemberton, R., and Sweet, J. E. *The Inhibition of Pancreatic Activity by Extracts of Suprarenal and Pituitary Bodies.*

1. Jackson and Eltings report a case of edema of obscure origin in a man of forty-five. The case was observed for a number of weeks with ultimate recovery. Careful urinary examinations were made at frequent intervals, with negative findings, except for great diminution of chlorides. On a salt-free diet the patient showed marked improvement, especially when accompanied by nitrate of potash and artificial Nauheim baths The authors discuss the various theories of the cause of edema and believe that the condition in their case was due to a combination of alteration of capillary epithelium plus changes in the protoplasm of the tissue cells.

2. Janeway and Mosenthal have observed a number of attacks of acute pain, fever, tachycardia and leucocytosis in a girl of sixteen. These attacks were of sudden onset, with more or less distinct aura. Nothing in the physical examination had been found to account for them. The attacks seemed to belong in the same category with recurrent vomiting. The authors have made careful metabolic determinations before, during and after the attacks. Their tables show the results of a purin-free diet and also the effects of feeding meat. They discuss the relations of this case with epilepsy and recurrent vomiting.

3. Gilbert presents a very careful study of the cases reported of infection of men by fly larvæ of various kinds.

4. Knox and Meakins report on the urinary findings in a series of 53 cases of digestive disturbances in infants observed at the Thomas Wilson sanatorium. Of the 53, 22 showed abnormal characteristics in the urine; in 7, albumin and occasional hyaline casts; in 7, pus cells were the chief characteristic, and in 8, albumin, casts and pus were all present.

The urinary changes were more frequent in ileocolitis than in dyspeptic or fermental diarrheas, though the renal involvement seemed to depend less on the variety of the intestinal affection and more on its intensity.

The pyuria persisted in some instances without apparently interfering with convalescence; in others it yielded to urotropin, and in still others it developed into a serious and fatal complication.

The infection seemed to have its origin in the intestinal canal, from which it reached the kidney either through the blood or lymph or by contiguity.

The usual changes during intestinal diseases in infants seemed to be those of degeneration, parenchymatous, hyalin and fatty, of the convoluted tubules, rather than those of focal infection.

5. Morgan and Wilkinson report a series of 10 cases of cerebrospinal meningitis treated with Flexner's serum, with a mortality of 22%.

6. Loeb discusses the question of the bacteriology of acute rheumatism. He reports on his blood cultures in 45 cases. He gives an account of the efforts of different workers on this subject and the reasons for doubting the specificity of the micrococcus rheumaticus.

7. Beck and Stokes present a very interesting article on a case of Stokes-Adams' disease where the primary lesion in the heart consisted in marked calcareous infiltration of the auriculo-ventricular groove and its surrounding muscular and fibrous tissue.

This calcification produced pressure on the bundle of His, causing extensive fibrous myocarditis with atrophy of the muscular fibers.

The authors give a careful report of the autopsy findings, with some beautiful colored photographs of the heart and microscopic sections, showing the lesions. [W. B. R.]

Bulletin of the Johns Hopkins Hospital.

October, 1908.

1. Adami, J. G. *Sir John Harrington.*
2. MacCallum, W. G. *The School of Montpellier.*
3. Steiner, W. R. *Dr. Elisha North, One of Connecticut's Most Eminent Medical Practitioners.*
4. Jelliffe, S. E. *The Psychiaters and Psychiatry of the Augustan Era.*
5. Ruhrah, J. *Thomas Muffett, 1553–1604.*

The Lancet.

Oct. 3, 1908.

1. Manson, P. (Sir). *Huxley Lecture on Recent Advances in Science and Their Bearing on Medicine and Surgery.*
2. *Morris, H. *Treatment of Inoperable Cancer.*
3. Sinclair, W. J. (Sir). *On Pregnancy, Parturition and the Puerperium after Ventrifixation (Hysteropexis Hypogastria).*
4. *Clogg, H. S. *Cancer of the Colon; a Study of Seventy-two Cases.*

2. Morris gives a long general article on the treatment of inoperable cancer, in which he goes over the various palliative operations and the indications for and against such operations in cancer of the stomach, rectum and uterus. Among the other methods of treatment he devotes considerable space to the use of trypsin. He comes to no definite conclusions as regards the value of this method of treatment.

4. Clogg has made a study of seventy-two cases of cancer of the colon. In many cases he believes that this is a local disease. He describes the lymphatics involved in the growths of the cecal region and of the iliopelvic colon. The most common symptom in his series of cases was that of pain, most often in the nature of colic. A palpable tumor was felt in about 43% of the cases, equally divided between males and females, mostly occurring between the years of forty and sixty. [J. B. H.]

Oct. 10, 1908.

1. Allbutt, T. C. (Sir). *Address on Hospitals; Public Medicine and Medical Studies.*
2. *Abstracts of Introductory Addresses delivered at the Medical Schools, Session 1908–9.*
3. Ballance, C. A. *Case of Division of the Auditory Nerve for Painful Tinnitus.*
4. *Currie, J. R., and Macgregor, A. S. M. *Serum Treatment of Cerebrospinal Fever in the City of Glasgow Fever Hospital, Belvidere, between May, 1906, and May, 1908.*
5. Bousfield, E. C. *An Attempt to Rehabilitate the Permanganates.*

4. Currie and Macgregor give the results of the serum treatment of cerebrospinal fever in Glasgow during the past two years. There were 330 cases; 105 were treated with serum; 225 cases were not treated. They used four forms of serum. Flexner's serum was not used. Their results were, on the whole, disappointing. The mortality of the untreated cases was 79%, that of the treated cases 74%. This, in comparison with the mortality of 27% in the cases treated by Flexner with his serum, is somewhat surprisingly high. They give statistics in regard to the serum treatment with reference to period of administration, quantity of serum used, the length of the disease, both in those cases which ended in death and in those which recovered. They believe that this serum, although it failed to arrest the disease in many cases immediately, was yet able to hamper its progress, aiding in this way the natural defenses of the body and hindering in all likelihood the formation of exudates which would stand in the way of recovery. There are numerous tables of statistics. [J. B. H.]

British Medical Journal.

Oct. 3, 1908.

1. Macalister, A. *Address on Fifty Years of Medical Education.*
2. *Berkeley, C., and Bonney, V. *On the Radical Abdominal Operation for Carcinoma of the Cervix (Wertheim's), with Notes of Eighteen Cases, of which Sixteen were too Advanced for Vaginal Hysterectomy.*
3. *Hill, L. *Oxygen and Muscular Exercise as a Form of Treatment.*
4. Mathew, P. W. *Case of Hereditary Brachydactyly.*
5. Seventy-sixth Annual Meeting British Medical Association. *Section of Surgery.*
6. Cheyne, W. W. (Sir). *Discussion on the Diagnosis and Treatment of Cancer of the Breast.*
7. Championniere, J. L. *Treatment of Fractures by Mobilization and Massage.*
8. Tillmanns, H. *Something about Puncture of the Brain.*
9. Willens, C. *The Technic of Tarsectomy for Talipes.*
10. Kennedy, R. *Section of the Posterior Primary Divisions of the Upper Cervical Nerves in Spasmodic Torticollis.*
11. *Thomas, J. L. *Simplified Method of Performing Prostatectomy by the Combined Routes.*
12. Drew, D. *Selection of the Method of Operating in Cancer of the Rectum.*
13. Monprofit, A. *On Cholecystenterostomy in the Form of a "Y."*
14. Newman, D. *Discussion on the Indications for Nephrotomy and Nephrectomy.*
15. Evans, W. *Gastrostomy, with Special Reference to Senn's Operation.*
16. Corner, E. M. *Indirect Treatment of Disease of the Epididymis and Testicle.*
17. Fullerton, A. *Some Cases of Hematuria.*
18. Depage, A. *Painful Displacement of Ribs.*
19. Ryall, C. *The Technic of Cancer Operations, with Reference to the Danger of Cancer Infection.*
20. Groves, E. W. H. *Surgical Statistics; a Plea for a Uniform Registration of Operation Results.*

2. Berkeley and Bonney present a long article with notes on eighteen cases of carcinoma of the cervix, with remarks on the radical abdominal operation. There are numerous illustrative cases and illustrations. They believe that the operation which they describe, the so-called Wertheim operation, is the best for this condition. The technic of this operation, as employed by them, they describe in detail.

3. Hill presents notes on the use of oxygen and its effect on muscular exercise, both as regards results obtained and as a form of treatment. He describes his experiments with horses and in various athletes in running and swimming; also its use in his own case in bicycle riding.

Flack, in the same article, describes the effect of oxygen on Wolffe in his Channel swim of Sept. 19, 1908. He does not come to any definite conclusions, but nevertheless the article is of interest as presenting a new use for oxygen. Whether this is safe or not remains to be seen.

11. Thomas describes his method of performing prostatectomy by the combined perineal and suprapubic routes. He has collected the previously reported cases of prostatectomy by both methods, and names the advantages of each. He believes that the combined method which he describes possesses the best features of each form of operation. [J. B. H.]

Oct. 10, 1908.

1. Taylor, F. *Post-Graduate Lecture on the Varieties of Malignant Endocarditis.*
2. Walker, E. W. A. *Bees' Stings and Rheumatism.*
3. Smith, P. W. B. *Aneurysm of the Heart due to Syphilitic Gummata.*
4. *Todd, J. L. *Prevention of Sleeping Sickness.*
5. Swindale, J. A. *Tracheal Insufflation in New-born Infants.*
6. Walker, H. F. B. *Infective Warts.*

SEVENTY-SIXTH ANNUAL MEETING, BRITISH MEDICAL ASSOCIATION.

Section of Medicine.

7. *Pitt, G. N. *Discussion on the Etiology of the Degenerative Changes in the Aorta.*
8. Pratt, J. H. *Results Obtained in the Treatment of Pulmonary Tuberculosis by the Class Method.*
9. Squire, J. E. *An Exo-cardial Murmur often Misinterpreted.*
10. *Waterhouse, R. *Remarks on the Arthropathies of Acquired Syphilis.*
11. *Grunbaum, O., and Pitt, W. O. *An Attempt to Prevent the Adhesion of the Pleura after Inflammation.*
12. *Russell, W. *Clinical Estimation of Blood Pressure; the Finger and the Hemomanometer.*
13. Carter, G. *Case of "Apyrexial Typhoid."*
14. Hertz, A. F. *Constipation.*
15. James, J. B. *Sciatica and Its Treatment.*
16. *Hort, E. C. *Treatment of Chronic Gastric and Duodenal Ulcer with Antilytic Serum.*
17. *Raw, N. *Human and Bovine Tuberculosis, with Special Reference to Treatment by Different Kinds of Tuberculin.*

Section of Dermatology.

18. Little, E. G. *President's Opening Remarks.*
19. Neisser, A. *Syphilis, with Special Reference to Experimental Work on the Subject.*

20. Sabouraud, R. *The Dermatomycoses Common to Man and Animals.*

Section of Laryngology, Otology and Rhinology.

21. Thomson, S. *Discussion on the Methods of Dealing with Suppuration in the Maxillary Sinus.*
22. Downie, W. *On the Permanence of the Improvement in the Shape of the Nose obtained by Paraffin Injection.*
23. Tweedie, A. R. *Some Observations on the Results of the Application of Barany's Tests to "Deaf Mutes."*

4. Todd, in an interesting article on "Sleeping Sickness," describes the rapid spread of this most serious disease over the entire Congo Free State and into the adjoining country. He believes that its progress is not explained by the mechanical transmission of the trypanosome by *Glossina papalis* alone, but that it is spread by diseased persons coming into contact with others, and that only by a careful segregation of those who are afflicted with this disease can the sleeping sickness be regulated.

7. Pitt, writing on the etiology of degenerative changes in the aorta, first describes various pathologic lesions which are found, including fatty degeneration, calcareous degeneration and changes due to syphilis. He believes that the Anglo-Saxon race is especially liable to this disease. The more laborious the occupation, the more frequently it is found; it is not the necessary result of age, however. The tendency lately has been to consider chronic infective processes as more potent than high blood tension in the production of atheroma, it having been found that blood pressure with advanced atheroma may be either high or low. It is difficult to obtain positive evidence that alcohol has any direct effect in producing this condition, while lead, tobacco and other poisons act only indirectly. In regard to infections, he puts down those diseases which are known to cause this condition. He describes the work which has been done on this subject by experiments on animals.

10. Waterhouse describes the various arthropathies of acquired syphilis and believes that these conditions are frequently overlooked as complications of this disease, particularly in the secondary stage. The various pains in the limbs which accompany the secondary lesions in many cases he thinks are due to actual joint involvement.

11. Grunbaum and Pitt have experimented on animals in whom they produced artificial pleurisies by injecting liquid paraffin, hoping to prevent the formation of adhesions. Their results, on the whole, tend to show that this method is of some value.

12. Russell presents various cases and specimens of arthritis by which he believes that he has demonstrated that the clinical estimation of blood pressure by means of the finger is more accurate than that by the hemomanometer.

16. Hort, in an interesting article, describes his treatment of chronic gastric and duodenal ulcer with antilytic serum. He believes that the chronicity of this condition is due to the frequent persistence of the unknown cause which gave rise to the ulcer, the difficulty of maintaining the proper grade of nutrition so essential to repair and the impossibility of determining to the site of a chronic ulcer with a thickened floor the bodies that the lymph stream should carry there to maintain local nutrition and restrain destruction of tissue. By giving normal horse serum, fresh, atoxic and sterile, in doses of 20 ccm. to 30 ccm. after each meal, he had remarkably beneficial results. He believes that this serum furnishes the stimulation necessary to bring about a healing of the ulcer. He combines his treatment with rest in bed and suitable diet. He gives the details of five cases. While enough has not yet been done to base any very definite conclusions, his article is full of value.

17. Raw describes the results of treatment of pulmonary and surgical tuberculosis by means of tuberculin obtained from human and bovine sources. Surgical tuberculosis, which he believes is caused by the bovine infection, he treats with tuberculin obtained from human sources; pulmonary tuberculosis he treats with a bovine tuberculin. He cites cases of surgical tuberculosis treated without measures of any kind except the tuberculin, with which he has had remarkably good results. His lung cases he gives bovine tuberculin in small doses and combines it with the outdoor hygienic treatment. He believes only early cases should be taken and the younger the age, the more favorable are the results. As usual in statistics on this subject, it is impossible to say as regards his lung cases which factor has given rise to the good results which he has obtained. [J. B. H.]

Deutsche Medizinische Wochenschrift. No. 40.
Oct. 1, 1908.

1. Rubner, M. *Strength and Material in the Economy of Life.*
2. *Calmette, A. *New Methods for the Early Diagnosis of Tuberculosis.*
3. Schlossmann, A. *The Advances in Our Knowledge in the Domain of Infants' Diseases.*
4. Riedel. *The Prognosis of Goiter Operation in Basedow's Disease.*
5. Pfannenstiel, J. *Transperitoneal Cesarean Section by Means of a Longitudinal Incision through the Cervix and Lower Part of the Uterus.*
6. Sellheim, H. *The Influence of Asepsis and Infection upon the Technic of Delivery by Abdominal Section.*
7. Leuwer, C. *Pyocyanose in Acute Middle-Ear Suppurations.*
8. Scheffzek. *The Removal of Retained Membranes with the Membrane Forceps.*
9. Kalischer, S. *Sabromin, a New Bromin Preparation.*
10. Walburn, L. E. *A New Albuminometer.*
11. Zernik, F. *New Drugs, Specialties and Proprietaries.*

2. Calmette emphasizes the importance of making an early diagnosis in cases of tuberculosis, especially because a second infection coming on while another focus in the body is latent runs a peculiarly rapid course. On the other hand, when a focus has once been cured, the whole bodily resistance towards subsequent infection is increased. He then gives a review of the different methods applicable for making an early diagnosis. Some of the clinical signs are: A rise in temperature with slight exertion; auscultation and percussion; albuminuria or albuminosuria; absence of eosinophiles; increase in mononuclear cells. The relation of oxygen used and CO_2 excreted has been worked out; it is a slight aid in some cases, but is complicated. Diazo reaction is only fairly good in late cases. Laboratory methods of value are staining for the bacilli and animal inoculation. A new method of inoculating beneath the udders of nursing animals gives results in a shorter time (five to ten days). Agglutinating phenomena help in some cases; also cytodiagnoses and complement binding. A test with cobra poison has been worked on, which is as yet too untried to state definitely its value. It rests on the following principle:

Red blood cells + cobra poison = no hemolysis.
Red blood cells + cobra poison + certain inactivated sera = hemolysis.

Of species that have tuberculosis spontaneously or are easily infected, such as man and cattle, the sera will not aid the poison in causing hemolysis, if it comes from tuberculosis-free individuals. If it comes from tubercular individuals, hemolysis occurs. He then takes up the opsonic method for diagnosis and the tuberculin injection method.

He concludes by stating his belief that the cutaneous and ocular reactions are by far the best methods of detecting early tuberculosis. [C. F., Jr.]

Berliner Klinische Wochenschrift. No. 40.
Oct. 5, 1908.

1. Mohr, L., and Freund, R. *Experimental Contributions to the Pathogenesis of Eclampsia.*
2. *Gamaleia, N. T. *The Etiologic Factor of Scarlet Fever.*
3. Zupnik, L., and Spät, W. *The Demonstration of Antigen and Antibody in the Blood of Typhoid Patients.*
4. Goldbaum, M. *Specific Neurotoxins.*
5. Asch, R. *Atrophy of the Kidney in Ureteral Fistula.*
6. Schlesinger, E. *The Virulence Exalting Property of the Bile in Infections with Typhoid or Colon Bacilli.*

7. Bornstein, K. *Quality or Quantity?*
8. de Haan, J. *Infection with Tubercle Bacilli in the Guinea-Pig by Absorption from the Gastro-Intestinal Canal.*
9. Winnogradow, B. *The Question of Oxalic Acid Poisoning.*
10. Rewidzoff, P. *A Simplification of the Technic for Esophagoscopy.*

2. Gamaleia reports that in twenty-five cases he has been able to recover an organism from skin, throat and internal organs of scarlet-fever patients and to follow in part its life cycle. The author names the organism "Synanthozoon scarlatinæ." Some forms of this parasite, which have been seen in blood, spleen and kidneys, resemble Mallory's "rosette bodies," and others the "chrysanthemum blooms" of Prowazek. [R. D.]

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Obituary.

WALTER R. GILLETTE, M.D.

Dr. Walter R. Gillette, of New York, died of intestinal cancer at the Roosevelt Hospital on Nov. 7. He was removed from his home to the hospital on Oct. 21 in a hopeless condition, and shortly afterwards was operated upon by Dr. Joseph A. Blake for the purpose of prolonging life to as great an extent as possible. His health had not been good for a considerable time and he was completely broken down by the notification of his trial and conviction of perjury in the recent life insurance investigations. On Oct. 28, 1907, he was sentenced to six months in the penitentiary, but prior to his sentence Dr. Alexander Lambert, his physician, testified that the defendant was suffering from heart trouble, owing to the strain and worry of the two previous years, and expressed the opinion that if Dr. Gillette were sent to prison even for a day it would mean practically a death sentence to him. Three days later he was admitted to bail, under a certificate of reasonable doubt obtained by his counsel, and on June 5 last he was set free by a decision of the Appellate Division of the New York Supreme Court, which not only reversed the conviction, but dismissed the indictment on the ground that his constitutional rights were invaded when he was called under subpœna as a witness before a grand jury which was investigating matters that concerned his official conduct, and in regard to the nature of whose investigation the defendant had not been specifically informed. Universal sympathy was expressed for Dr. Gillette in his trouble on account of his high reputation and blameless life. He was one of the few men connected with the life insurance investigation who showed a disposition to tell the truth, and it was felt that he had been made a scapegoat of, while the really guilty officials were allowed to go free. Dr. Gillette was born in Philadelphia and was graduated from Madison University, Hamilton, N. Y., in 1861. In 1863 he was graduated from the College of Physicians and Surgeons, New York, and shortly afterwards entered the Medical Corps of the Army, in which he served with distinction as acting assistant-surgeon during the two remaining years of the Civil War. At the close of the war he began practice in New York City, and for thirteen years was surgeon to the New York Post Office Department. He devoted his attention more particularly to midwifery, and in recognition of his capability in this branch of medicine he was appointed Adjunct Professor of Obstetrics in the medical department of the University of the City of New York. He was connected with the faculty of this school for fifteen years and on the death of the late Prof. Charles A. Budd succeeded to the chair of Obstetrics and Clinical Midwifery. Among the other positions which he occupied for many years, and still retained at the time of his death, were those of consulting physician to Bellevue, St. Francis' and the Manhattan State Hospital for the Insane. For a number of years Dr. Gillette had practically retired from practice and devoted his attention to life insurance interests, and for a considerable time before his trial he had been vice-president of the Mutual Company. His son, Dr. Curtenius Gillette, who was graduated from the College of Physicians and Surgeons in 1901, is visiting gynecologist to the Manhattan State Hospital and Adjunct Assistant Physician to Bellevue Hospital.

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Correspondence.

SERVICE IN THE ARMY MEDICAL CORPS.

Fort Banks, Mass., Nov. 5, 1908.

Mr. Editor: I have the honor to request that you give publicity to the following as being a matter of interest to the profession at large, and as offering an opening to a comfortable, interesting and useful life to some of the young men just coming from hospital service or struggling in civil practice.

Owing partly to the influence of the American Medical Association, Congress in its last session passed two bills that very materially better the position of the Army Medical Corps, giving it an increase in numbers, in proportions in the higher grades, in rapidity of promotion and in pay, so that an army career now compares very favorably with the successful practice of medicine in civil life.

It does not yet, and probably never will, offer opportunities for the accumulation of wealth, but it offers a very comfortable living, the opportunity to save something, an assured and dignified position, interesting general work and opportunities to engage in research or special work such as most civil practitioners cannot enjoy.

The pay starts with $2,000 per annum, with liberal allowance of quarters, fuel, light and mileage, and increases to $2,400 in three years, $2,640 in five years and so on. The rank given is that of first lieutenant, captaincy after three years, and majority, lieutenant-colonelcy and colonelcy as vacancies occur.

On Jan. 1, there will be about one hundred vacancies in the corps, and on the 11th examinations will be held for the purpose of filling them.

Candidates successful in passing near the head of the list will, therefore, have exceptional opportunities for rapid promotion.

Persons in this neighborhood can be examined at Fort Banks and so need be at no special expense, and those passing successfully can be commissioned and begin on pay and duty at once.

Applicants must be between twenty-two and thirty years of age, of good character and good physique and must have had one year's hospital experience or its equivalent in private practice.

I should be glad to see and talk with or to send circulars to any persons so qualified who desire further information.

Very respectfully,
P. M. Ashburn, M.D.,
Major Medical Corps, U. S. Army.

RECORD OF MORTALITY

For the Week ending Saturday, Oct. 31, 1908.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	2	—
Chicago	541	161	Waltham	4	0
Philadelphia	—	—	Pittsfield	3	—
St. Louis	—	—	Gloucester	4	1
Baltimore	158	37	Brookline	8	3
Cleveland	—	—	North Adams	6	5
Buffalo	—	—	Chicopee	13	5
Pittsburg	—	—	Northampton	2	0
Cincinnati	—	—	Medford	6	1
Milwaukee	—	—	Beverly	7	—
Washington	—	—	Leominster	2	—
Providence	—	—	Hyde Park	7	3
Boston	232	68	Melrose	4	2
Worcester	37	—	Newburyport	—	—
Fall River	35	18	Woburn	4	0
Cambridge	27	10	Westfield	2	—
Lowell	30	5	Marlboro	2	0
Lynn	35	9	Revere	2	1
New Bedford	20	7	Attleboro	2	1
Springfield	23	6	Peabody	—	—
Lawrence	22	12	Adams	3	1
Somerville	22	5	Clinton	3	1
Brockton	7	2	Gardner	3	—
Holyoke	17	3	Milford	3	0
Malden	9	2	Watertown	2	1
Chelsea	3	0	Plymouth	—	—
Newton	12	5	Weymouth	4	0
Salem	11	5	Framingham	5	—
Haverhill	11	4	Southbridge	5	—
Fitchburg	10	6	Wakefield	—	—
Everett	7	1	Webster	—	—
Taunton	10	4	Arlington	3	0

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING NOV. 7, 1908.

Von Wedekind, L. L., surgeon. Detached from the "Alabama" and ordered to the "South Dakota." Oct. 30.

Stepp, J., passed assistant surgeon. Detached from the "Denver" and ordered home to wait orders. Oct. 30.

Dessez, P. T., passed assistant surgeon. Detached from the "South Dakota" and ordered to the Pacific Fleet, sailing from San Francisco about Dec. 5. Oct. 30.

Norton, O. D., surgeon. Detached from the Marine Recruiting Station, New York, N. Y., and ordered to the Naval Recruiting Station, New York, N. Y. Nov. 2.

Bogert, E. S., Jr., surgeon. Detached from the Naval Recruiting Station, New York, N. Y., and ordered to the Marine Recruiting Station, New York, N. Y.

Bucher, W. H., surgeon. Granted sick leave for three months when discharged from treatment at the Naval Hospital, Las Animas, Colo.

SOCIETY NOTICES.

New England Electro-Therapeutic Association. — The twenty-fifth regular meeting will be held in the auditorium (third floor), Edison Building, 39 Boylston Street, Boston, Mass., Friday, Nov. 13, 1908, at 8 p.m. A paper will be read entitled "The Electric Treatment of Some Diseases of the Female Pelvic Organs," by Herbert F. Pitcher, M.D., of Haverhill, Mass. The profession are cordially invited.

Samuel J. Harris, M.D.,
Chairman.

Boston Medical Library in Conjunction with the Suffolk District Medical Society. — Surgical Section Meeting, John Ware Hall, Wednesday, Nov. 18, 1908, at 8.15 p.m. "Cancer of the Bladder," Dr. Arthur T. Cabot; "Cystitis," Dr. Arthur L. Chute. Discussion by Drs. F. S. Watson, F. B. Harrington, Paul Thorndike, Edgar Garceau. Light refreshments after the meeting.

Fred T. Murphy, M.D., *Secretary*, 309 Marlborough St.
Franklin G. Balch, M.D., *Chairman*, 297 Clarendon St.

APPOINTMENT.

Dr. Frederic Brush, of Boston, has been appointed superintendent of the New York Post-Graduate Medical School and Hospital. Before assuming the position he will devote some time to a study of post-graduate instruction and hospital administration in the various American medical centers.

RECENT DEATHS.

Justin Allen, M.D., M.M.S.S., died in Topsfield, Nov. 5, 1908, aged eighty-two years.

Dr. Walter J. Corcoran, a prominent gynecologist of Brooklyn, N. Y., died at his home in that borough on Nov. 5. He was a native of Manchester, N. H., and fifty-two years of age. He was graduated from Holy Cross College, and from the College of Physicians and Surgeons, New York, in 1882, after which he served as interne at St. Mary's Hospital, Brooklyn. All his professional life was passed in Brooklyn, and at the time of his death he was attending gynecologist to St. Mary's Hospital and surgeon to St. Mary's Female Hospital.

BOOKS AND PAMPHLETS RECEIVED.

Presidential Address: Hopeful and Discouraging Aspects of the Psychiatric Outlook. By Charles P. Bancroft, M.D. Reprint.

The Deterioration and Commercial Preservation of Flesh Foods. By W. D. Richardson and Erwin Scherubel. Reprint.

The Medical Witness in Lunacy Cases. By Presley C. Hunt, M.D. Reprint.

The Surgical Treatment of Ureteral Calculus in the Female. By Edgar Garceau, M.D. Reprint.

The Evolution of Modern Maternity Technic. By Emma L. Coll, M.D. Reprint.

General Pathology. By Dr. Ernst Ziegler. Translated from the eleventh revised German edition. Edited and brought up to date by Aldred Scott Warthin, Ph.D., M.D. Illustrated. New York: William Wood & Co. 1908.

International Clinics. Edited by W. T. Longcope, M.D., and others. Eighteenth Series, Vol. III, 1908. Philadelphia and London: J. B. Lippincott Co. 1908.

Refraction of the Eye. By Harry C. Parker, M.D. Illustrated. Philadelphia and London: W. B. Saunders Co. 1908.

Reference Hand-Book for Nurses. By Amanda K. Beck. Second edition, revised. Philadelphia and London: W. B. Saunders Co. 1908.

Year Book of the Medical Association of the Greater City of New York. P. Brynberg Porter, A.M., M.D., editor. June, 1908.

A Manual of Obstetrical Technique as Applied to Private Practice. By Joseph Brown Cooke, M.D. Illustrated. Sixth edition, enlarged and fully revised. Philadelphia and London: J. B. Lippincott. 1908.

Emergency Surgery. By John W. Sluss, A.M., M.D. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1908.

Diet in Infancy. The Essential Introduction to the Study of Disease in Childhood. By A. Dingwall-Fordyce, M.D., F.R.C.P. Ed. Edinburgh and London: William Green & Sons. 1908.

Taber's Pocket Encyclopedia Medical Dictionary. Edited by Clarence W. Taber. Associate editor, Nicholas Senn, M.D., Ph.D., LL.D., C.M. Third edition, revised. Chicago: Laird & Lee.

Treasury Department, Public Health and Marine-Hospital Service of the United States. Pellagara. A Précis. By Passed Assistant Surgeon C. H. Lavinder. Washington. 1908.

A Text-Book of Diseases of Women. By Charles B. Penrose, M.D., Ph.D. Illustrated. Sixth edition, revised. Philadelphia and London: W. B. Saunders Co. 1908.

A Text-Book of General Bacteriology. By Edwin O. Jordan, Ph.D. Illustrated. Philadelphia and London: W. B. Saunders Co. 1908.

Intestinal Auto-Intoxication. By A. Combe, M.D. Together with an Appendix on the Lactic Ferments by Albert Fournier. Only authorized English adaptation by William Gaynor States, M.D. Illustrated. New York: Rebman Co. 1908.

Transactions of the Thirtieth Annual Meeting of the American Laryngological Association, held at Montreal, Canada, May 11, 12 and 13, 1908. New York, 1908.

Obstetric and Gynecologic Nursing. By Edward P. Davis, A.M., M.D. Third edition, thoroughly revised. Illustrated. Philadelphia and London: W. B. Saunders Co. 1908.

Obstetrics for Nurses. By Joseph B. De Lee, A.M., M.D. Third edition, thoroughly revised and enlarged. Illustrated. Philadelphia and London: W. B. Saunders Co. 1908.

Introduction à l'Étude Clinique et à la Pratique des Accouchements. Par le professeur L.-H. Farabeuf et le docteur Henri Varnier. Paris: Georges Steinheil.

Original Articles.

ACUTE GONORRHEAL EPIDIDYMITIS, WITH SPECIAL REFERENCE TO THE OPERATIVE TREATMENT.

BY JOHN H. CUNNINGHAM, JR., M.D.,
Visiting Surgeon to the Long Island Hospital, Boston; Third Assistant Visiting Surgeon, Boston City Hospital.

THE gratifying results obtained by operation in cases of acute active gonorrheal epididymitis, and the fact that this comparatively new method of treatment is just beginning to be recognized, leads to this publication.

The results in the writer's small series of 7 cases are in accord with those of other operators, notably Hagner, who presented a series of 25 cases at the meeting of the American Association of Genito-Urinary Surgeons, May, 1908.[1]

As is well known, acute gonorrheal epididymitis is very common. It is variously estimated that it occurs as a complication of gonorrhea in from 20 to 30% of cases. Epididymitis as a gonorrheal complication seldom appears before the second week of the urethritis. It may occur at any time in the subsequent course of the acute attack, or as a post-operative sequela without apparent cause. Even slight injuries to the testicle during the course of a gonorrhea favor the extension of the process to the epididymis.

Gonorrheal epididymitis results from the extension of a posterior urethritis along the ejaculatory ducts and vas deferens to the epididymitis. Infection of the prostatic glandular tissue (prostatitis) is usually present before this extension takes place, the prostate being found enlarged, boggy and abnormally tender by rectal palpation. Occasionally the prostate escapes the infection, the inflammation extending almost immediately upon reaching the posterior urethra. As the inflammation extends up the ejaculatory ducts to the ampulla of the vas, the seminal vesicles are invaded, Brönnum[2] having found the gonococcus in the secretion of the seminal vesicle on the side of the inflamed epididymis in 80% of cases, and in the others, leucocytes without the organism. The inflammatory process continues along the mucous membrane of the vas deferens to the tail of the epididymis, where the extension of the disease is most often arrested, probably because of the convoluted character and minuteness of the canal. In the severer forms of the disease the body and head of the epididymis is also invaded.

Epididymitis is usually unilateral. Double simultaneous epididymitis is extremely rare. Fournier[3] states that he has never seen a case of double simultaneous epididymitis, and Keyes[4] has observed it but twice. While double synchronous epididymitis is extremely rare, the involvement of one epididymis, subsidence of the process therein and the subsequent appearence of the inflammation in the other organ within a period of days is not unusual. Why the inflammation extends along one ejaculatory duct and not the other at the same time when the two openings are situated but a few millimeters apart is not clear. The extension upon one side alone may be due to the occlusion of one opening by swollen mucous membrane, while the other, not being thus stenosed, allows the infectious products to gain entrance.

Pathology. — Usually the acute process is most active in one part of the epididymis, most frequently in the tail or globus minor, next in the head or globus major. The process may, however, involve the whole appendage. Malassez and Terillon state that during the acute process the seminiferous tubules are swollen, their walls edematous and infiltrated, and the epithelium is deprived of its cilia. The tubules may contain a mixture of pus and semen, and the connective tissue about them is edematous and infiltrated. The inflammatory exudate gradually resolves and abscess formation is rare. The adjacent parts may become involved in the process, the testicle may be invaded and, according to Jacobson, the tunica vaginalis becomes inflamed and results in acute hydrocele in one third of the cases.

In the reparative process, connective tissue changes take place, appearing as hard nodules at the site of the acute process. These changes are often permanent and may occlude the seminiferous tubules or canal of the epididymis so that the spermatozoa cannot escape or are impaired in vitality in so doing. Hagner has found a small abscess containing gonococci in the center of such a nodule two years after the epididymitis has subsided. It is probable that an epididymis once involved by an attack of active gonorrheal infection renders the testicular secretions valueless because it cannot be conducted to the urethra in a healthy state.

Prognosis. — The prognosis regarding life is good. Fatal cases have, however, been recorded by Velpeau, Kocher, Finger and Keyes. These were instances of peritonitis and must be considered exceedingly rare. Suppuration is more usual when epididymitis appears as a complication of prostatic hypertrophy. Sexual desire and potency are not diminished, but sterility of the affected organ may result. The seminal discharge is not visibly changed in quantity or general character, yet the spermatozoa may be absent. Beuzla[5] investigated the frequency of offspring of the soldiers of the German army who had had gonorrhea, and found that 10.5% of those who had had the disease without epididymitis were childless, while of those who had single epididymitis, 23.4% were childless, and those with double epididymitis, 41.7% were childless. Liegeois (Kocher) found that after unilateral epididymiits the spermatozoa were lessened in number, and in 28 cases of double epididymitis he found complete absence of spermatozoa in 21. Keyes states that the more liable the individual is to relapses, the less likely he is to be sterile.

The location of inflammation in the tail or body of the epididymis where there is but one

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[1] Trans. of the Am. Asso. of Gen.-Urin. Surg., 1908.

[2] Hospitalstidende, Copenhagen, no. 46, 1907.

[3] Art. "Blennorrhagie," Dict. de Med. et Chir. Prat., p. 211.

[4] Genito-Urinary Dis., p. 719.

[5] Arch. für. Derm. u. Syph., 1898, xiv, 33.

canal is more apt to lead to sterility than when the focus is in the head, because here the canals draining the different segments of the testicle are numerous and some may escape occlusion. Burnett[6] states that in many cases sterility is overcome by gradual absorption of the exudate left after the inflammation, but it requires a long time.

The indurated area left in the epididymis may be the exciting cause of tubercular deposits or neuralgia. Albert has recorded a case of acute miliary tuberculosis affecting the testicle, following a gonorrheal epididymitis, in a man of robust health. This must be very unusual.

Symptoms: Local. — The onset of the symptoms varies, inasmuch as the pain may begin in the testicle or in the groin along the inguinal canal. The latter is more often the case in the acute gonorrheal infection, while in the subacute cases the pain begins in the testicle. The pain in the groin precedes that in the testicle by a few hours, but as the swelling in the epididymis increases, the pain becomes more intense there and the patient suggests the proper treatment by his desire to support the swollen organ. When allowed to hang, the increased weight of the inflammed organ produces a dragging pain along the course of the cord and locomotion is distressing. Pain in the loins is not an infrequent accompaniment and may be due to traction upon the cord. Von Leyden has assumed it to be due to peripheral inflammation extending along the nerves of the cord to the spermatic and renal plexuses.

If the swollen cord becomes strangulated in the external inguinal ring, pain becomes intense. When the inflammation has involved the cord to any extent, the testicle may be drawn up even to the external ring and the suffering is greatly augmented. It must be remembered that the inflammation has spread along the vas deferens to the epididymis and that the seminal vesicles are involved in the process.

There may be symptoms suggesting peritonitis, the temperature is high and the pain in the groin and lumbar region is severe. Eructation, hiccough, nausea and vomiting may be present in severe infections, the swelling increases rapidly and may be at its height in forty-eight hours after the onset. This, however, varies considerably. As the epididymis increases in size, it surrounds the testicle, and if the swelling is excessive, the testicle may be almost imbedded within it. When the swelling is at its height the scrotal skin is edematous and reddened and fluid may be present in the tunica vaginalis. Following the rapid swelling of the first few days, the process remains stationary for about four or five more, the inflammation then gradually decreases and its stage has usually terminated by the third week after the onset.

The inflammation of the tunica vaginalis producing acute hydrocele varies according to the degree of the inflammatory process. In some cases the fluid is poured out rapidly, and, as the swelling increases, the pain becomes more pronounced and may become so intense as to require tapping. The fluid may be absorbed entirely, soon after the inflammation in the epididymis has became quiescent. The inflamed surfaces, becoming glued together, sometimes obliterate the sac tunica vaginalis or produce adhesions within it. Occasionally the fluid remains after the epididymitis has subsided.

When the acuteness of the process has ceased, and the patient feels strong enough to be up and about, there may persist a dragging or neuralgic pain in the testicle during locomotion, which is sometimes unrelieved by suspension of the organ.

The gonorrheal or gleety discharge diminishes with the onset of the epididymitis and may cease entirely, but usually returns as the inflammatory process in the epididymis resolves. This discharge usually persists for weeks or months, is active and purulent in character and is due in most part to the associated infection of the prostate and seminal vesicle.

The *constitutional symptoms* in acute epididymitis vary with the virulence of the infection. There is the usual depression associated with pain, and the patient feels generally miserable. The temperature shows septic remissions, although it is seldom continually high and disappears before the pain and swelling. The pain may be excruciating and large doses of morphia may not relieve the suffering.

Relapses of inflammation in the epididymis are common. When the relapses do occur, they are *usually* milder than the first infection. Relapsing infections sometimes result in suppuration.

The *diagnosis* of acute epididymitis in which there is urethral discharge or a posterior urethritis from any cause is simple. Palpation, although entirely unnecessary because of the typical picture presented, and to be avoided because of the severe pain it causes, will reveal that the epididymis is much harder than normal and slightly uneven or nodular on its surface. The convex outline of the testicle may or may not be distinguishable. The only question in the diagnosis of the acute condition is whether the inflammation is in the epididymis or in the testicle. In the latter case the general symptoms are more marked.

Treatment. — The usual form of treatment of acute gonorrheal epididymitis is to cease all urethral medication until the process in the organ begins to subside and the discharge returns at the meatus. The patient is kept in the dorsal position with the testis elevated on a support laid across the thighs. Hot flaxseed poultices are applied to the scrotum. A light diet, large amounts of water and one of the urinary antiseptics are administered. Morphia is given if necessary to allay unusual pain. Under this form of treatment the patient is confined to bed from two to four weeks, at the end of which time the swelling will have declined and the patient may be allowed to get up with the testicles elevated by means of a suspensory bandage. He is in a weak condition from the suffering attending the disease and from the confinement in bed. The urethral discharge is usually again active, and treatment of the vesicle and prostate by massage, and the anterior and posterior urethra by medication, will, in most cases, be carried on for many weeks if not months before the discharge entirely disappears, leaving a clear urine with but a few shreds in it.

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[6] Morrow's System of Genito-Urinary Diseases; Syphilis and Dermatitis, vol. i, p. 14.

Operative treatment. — The question with regard to operative interference in this disease is: In what way does the operation benefit the patient? In answer it may be truthfully said that the suffering is brought to an abrupt ending; the course of the acute process is arrested; the duration of the disease both as regard time in bed, convalescence and after-treatment is materially shortened. Whether or not the function of the testicle is in any way preserved by operative interference cannot be stated.

The operative interference in acute gonorrheal epididymitis is simply applying the general surgical principle of drainage to the infected organ. It appears that Pirogoff[7] punctured a testicle for "orchitis" as far back as 1852, and H. Smith[8] punctured the epididymis when acutely inflamed in 1,000 cases with beneficial results. While the history of this subject is interesting, it has no real bearing, as the procedure of drainage of the acutely inflamed epididymis has not received serious consideration until the past two years. The recognition of its value is due chiefly to the excellent procedure employed by Hagner, of Washington, D. C.

Hagner's technic is as follows: The junction of the epididymis and testicle is defined and an incision two inches long is made through the scrotal skin in this line. The tunica vaginalis is opened and any fluid present escapes. The swollen epididymis with the testicle is delivered. The epididymis is punctured in many places with a sharp pointed knife. The punctures must penetrate the infiltrated fibrous covering and the body of the organ must be entered. If pus escapes, the opening should be enlarged with the knife, and a probe should be inserted to enlarge the canal. Such cavities should be washed out with a fine pointed syringe filled with corrosive 1-1,000, followed by salt solution. The epididymis should be gently squeezed to force to the surface as much of the infectious material as possible. This is sponged away with a sponge wet with corrosive. The tunica vaginalis is washed thoroughly with corrosive 1-1,000 followed by a liberal amount of salt solution. A cigarette drain is placed over the punctured epididymis and brought out of the lowest part of the wound. The tunica vaginalis is closed by a continuous catgut suture and the scrotal skin by a lock-stitch horsehair suture. A moist corrosive dressing is applied, and the testicle held elevated by a scrotal support.

The dressing should be performed the day following the operation and the drain started. Except in cases where suppuration is considerable, it is rare that the wound needs irrigation. As a rule the wick may be removed in a few days and the wound is generally healed in ten days. A supporter should be worn for several months. The urethral discharge occasionally stops with the involvement of the epididymis and does not return. If, however, the urethritis is still present or returns, it should receive appropriate treatment after the acuteness of the inflamatory process in epididymis has subsided.

The conclusions deduced by Baerman[9] from the study of 28 cases, and the uniformly good results obtained by many operations, justly warrants the employment of this operation in all cases of acute epididymitis in which there is possible suppuration, with or without associated hydrocele, and for the relief of pain from intra-epididymeal tension.

Baerman's deductions are as follows: (1) In a large proportion of cases of epididymitis, abscess formation takes place. (2) Suppuration is regularly followed by hydrocele. (3) Gonococci are found in the foci in the epididymis years after the urethral infection. (4) Early puncture probably saves the canal of the epididymis from occlusion. (5) Draining the hydrocele improves the circulation in the testicle. (6) Incision and drainage of the infected epididymis should be more generally practiced.

Operative experience has shown that the excruciating pain accompanying epididymitis is relieved immediately after puncture, and that the systemic intoxication is lessened, the leucocyte count dropping almost immediately; that the patient recovers from the disease more rapidly, and the probabilty is that the patency of the canal is more often retained because the chronic indurated areas expected after epididymitis are often absent. It is too early as yet to make any statement regarding a late insidious recurrence of the disease, but it is fair to presume that these cases should be less frequent.

In all, Hagner has operated upon 25 patients. Pain has subsided directly following the operation, and the leucocyte count has fallen rapidly in each instance. Hagner's cases have remained in bed on an average of about five days following operation, at which time they were allowed to get up with a suspensory bandage. The urethral discharge returned in all but three patients. These three patients have remained well several months after operation. In none of the other patients was the returning discharge nearly as active as is generally seen with the subsidence of an epididymitis treated symptomatically. Dr. Hagner has made the following statement to me regarding the returning discharge: "In none of the cases in which the discharge returned was prolonged treatment necessary, as they seemed to recover more rapidly than cases which did not develop epididymitis." The results obtained in the writer's series of 7 cases are in accord with those of Dr. Hagner.

The writer's first operation was undertaken because of intense suffering. This patient was referred by Dr. Joseph Saunders, of Brookline, who had failed to relieve the patient by the usual method of treatment. The suffering was intense; three ¼ gr. of morphia were administered at hour intervals before the pain could be controlled. The leucocyte was 21,000 and the temperature 102.5°. Following the operation the patient was entirely relieved of pain, and twenty-four hours later the temperature was normal and the leucocyte count 6,500.

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[7] Lancet, 1852, vol. ii, p. 149.

[8] *Ibid.*, 1864.

[9] Deut. Med. Wochenschr., 1903, no. 40.

The six other cases were likewise relieved of pain immediately following the operation. The patients were confined to bed four or five days. The wounds healed in from eight to fifteen days. The discharge returned in 5 out of the 7 cases. It is believed that the prostate was also infected in each case. In two patients, the seminal vesicle on the affected side was much enlarged. In both of these cases, beside draining the epididymis, the vas was drained after the method advised by Belfield.[10] This procedure consists in bringing the vas deferens to the surface, opening its lumen and stitching the opening to the scrotal skin, keeping the lumen open for drainage and medication by inserting a bit of silkworm gut into it in both directions. In both these cases the mucous membrane lining the canal of the vas was acutely inflamed. In each instance the vas continued to drain after the scrotal wound had healed. Massage of the vesicle caused a slight discharge of thin purulent fluid to escape at the opening in the vas, in one case for six days, and in the other for eight days, after the scrotal wound had healed. The vesicle in both these patients diminished in size and was practically normal by palpation in the periods of time stated above. When the vesicles appeared normal a bit of fine catgut was placed in the vas above and below the cut point, thereby establishing the continuity of the canal when the catgut should become absorbed. The stitches holding the vas to the skin were removed and a single suture was employed to close the point at which the vas had been exposed.

One of these patients had no return of the urethral discharge; the other had the most active recurrent discharge of the series. The case which had no return of discharge has a clear urine with a few comma shreds ten months after operation.

Of the 5 cases in which the discharge returned, none had as active a discharge as one generally sees occurring with the subsidence of an acute gonorrheal epididymitis. Three of these patients were cured of the discharge by massage and deep instillations of argyrol, 10%, in six, ten and twelve weeks following operation. The remaining 2 cases still have a drop of thin purulent discharge at the meatus on arising in the morning. The microscope shows this fluid to be of prostatic origin. These cases are being massaged and are receiving deep instillations of argyrol, 10%. One patient was operated upon five weeks ago; the other, nine weeks ago.

Induration in the epididymis remains after operation but it is not of the discreet nodular type generally observed in an epididymis previously the site of gonorrheal infection. Instead, it is the induration commonly observed after drainage of any inflamed structure.

The sensitiveness so often noted in the testicle after epididymitis, and which often lasts seven months, has been absent.

In conclusion, there is no question in the mind of the writer that the operation advised by Hagner greatly lessens the suffering and diminishes the duration of the disease. Whether or not the epididymis is left in a better condition to serve as a conduit for the testicular secretions cannot be determined. It is a notable fact that recurrent epididymitis has not taken place in any case in which the operation has been performed.

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THE LAW AND MEDICAL EXPERTS, WITH PARTICULAR REFERENCE TO THE CODES OF CRIMINAL PROCEDURE OF EUROPEAN COUNTRIES.*

BY CHARLES GREENE CUMSTON, M.D., BOSTON.

"We find the prisoner not guilty by reason of insanity."
"But the plea was not that of insanity," remarked the Court.
"That is just the point we made," rejoined the foreman. "We decided that any man who didn't have sense enough to know that an insanity plea was the proper caper must be crazy."— *Philadelphia Ledger.*

For some time past the medical and legal professions of Massachusetts have recognized the necessity of revising the present methods of expert medical testimony in civil and penal cases. Several papers have been contributed to this subject of late and have found place in the Boston Medical and Surgical Journal; consequently, for this reason, I shall not refer to them. It occurred to me, however, that, as it is always well to know what others have done and are doing, it might be of interest at the present time to review the laws governing medical expert testimony, particularly in criminal cases, on the Continent.

A recent experience in a criminal court of New York appears to have attracted more than ordinary attention to the unsatisfactory condition of the testimony of medical experts at the present time. This interest is manifest from the fact that the Medical Society of the State of New York, in which more than one half of the profession in that state is enrolled, at a recent meeting appointed a committee to confer with another committee from the Bar Association of New York for the purpose of formulating a bill intended to become a law, for the regulation of medical expert testimony in New York state. In an address delivered the latter part of April of this year before the New York Academy of Medicine, ex-Judge Rufus B. Cowing, whose long experience upon the bench, and especially in criminal cases, should entitle his remarks and criticisms to respect, made some suggestions of great value in their bearing upon this important subject.

In the first place, he asserted that much of the just and harsh criticism made against medical expert testimony, which has brought it into both disrespect and disrepute among the people generally, is due to its partisan character, which is invariably made evident from the fact that the expert always gives his opinion in the interest of the party by whom he is summoned and paid. He furthermore pointed out the absurdity of the practice in a trial of permitting a medical expert to play the double part of witness and adviser to the defendant's counsel. In a criminal case where the defense is insanity, it is insisted that a witness should have made a special study of psychology and should be absolutely familiar with the law's definition of insanity. By the law of New York state, a person is not excused from criminal liability as an insane person except upon proof that, at the time of committing the alleged criminal act, he was laboring under such a defect of reason as either not to know the nature and quality of the act he was perpetrating, or not to know that this act was wrong. In order to establish the defense of insanity as an excuse for an otherwise criminal act, it must be shown that the defendant's mind was so diseased at the time of committing the act that he did not have sufficient mental capacity to form a criminal intent, and did not know that the act which he was perpetrating was wrong.

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[10] Trans. of the Am. Asso. of Gen.-Urin. Surg., 1907; also Jour. Am. Med. Asso., April 22, 1905.

* Read by invitation before the Massachusetts Medico-Legal Society, June 9, 1908.

Judge Cowing declared that the practise of allowing a medical expert to emit his opinion upon an hypothetical case, based upon assumed facts not within his personal knowledge, should not be permitted. Nothing can be more absurd than the usual long-drawn-out hypothetical questions which are based only upon a portion of the evidence, and usually upon that portion only which is most favorable to the party asking the question.

As a rule these questions are both unfair and misleading, and instead of aiding a jury to come to a correct conclusion, they tend to mystify and confuse them to such an extent as often to cause a miscarriage of justice. He also declared that an expert not possessing sufficient ability to personally examine the defendant and ascertain for himself the facts upon which he predicates his opinion should not be allowed to give it. Moreover, the rule regulating the admissibility of the opinions of non-experts or lay witnesses upon the mental condition of a person should be applied only to expert witnesses.

At the meeting at which the address of Judge Cowing was made, the president of the Academy, a member of the committee appointed by the State Medical Society, submitted the conclusions reached, which the committee of the Bar Association would be asked to amend or approve. It embodied the idea that the leading medical organizations of the state shall, through committees appointed, furnish to the Court or Courts in the various counties a list of the names and members of the medical profession in good standing, and of not less than seven years' actual practice, recommended by them as competent and expert in medicine. From this list the Court may select such expert or experts as in its judgment may be required. Such experts shall be paid out of the treasury of the county a fixed fee, and they may be called by any Court of the state. Testifying as unprejudiced witnesses, employed only by the court, it is evident that their opinion will bear more weight with the Court and the jury than that of an expert paid by a given side for a given service. Such a law enacted would not prevent a person from employing any expert as a witness, but, in view of the fact that little, if any, weight is now given by a jury to the testimony of a witness paid by one or the other side of the trial, such expert testimony would be rarely employed.

In what is to follow it will at once be seen that the bill proposed in New York state for the regulation of expert medical testimony is not unlike the provisions found in the criminal codes of European countries. But, before considering these, I would like to say a few words as to what should be considered the prerogatives and limitations of the medical expert witness in penal cases.

In every question submitted to trial, either of a civil or criminal nature, the Court which must render a sentence has two questions to consider, namely, the evidence and the application of the law. In the first case the Court must reply to the following question: Has it been proven that such and such an act has transpired? In the second case it must, supposing that the reply to the first question is positive, apply the law to the evidence that has been declared actual. Now, although a judge's knowledge of law is, of course, necessary to decide the second question, he has hardly any need, in the first part of his undertaking, of more than applying that judgment with the common sense that the average man possesses to a more or less eminent degree, but which may, perhaps, be more developed in judges on account of their professional attributes.

In order to decide the first question, to know exactly what has transpired, judges have at their disposal certain means of evidence, the laws of which govern the carrying out of this point; that is to say, they have direct or indirect means of discovering the various facts. Among these means of evidence we would first refer to direct evidence, but which should not be considered as actual evidence. There are certain facts that we immediately perceive without any intermediary, while there are others, on the contrary, which are discovered by the intermediary of other facts which have been first brought to light, and by reasoning lead from the known to the unknown. The former constitutes the direct evidence, and it is this which enters in play when, for instance, the police discover the culprits in *flagrante delictu.* The second are matters of evidence, properly speaking; such, for example, as testimony given by witnesses.

There are certain facts which, although submitted directly to the action of our senses, cannot be appreciated unless one is in possession of special knowledge relative to the point which must be verified. Supposing, for example, that the police discover the cadaver of a man whose death occurred suddenly without any witness and under mysterious conditions, or conditions that are absolutely unknown. The Court must be enlightened as to the cause of this death, and the judge does not possess, or is supposed not to possess, the necessary knowledge which would enlighten him as to these causes. Now, just as one uses optical instruments in order to remedy the imperfection of the eye, the Court also supplements to the insufficiency of its perceptions certain scientific auxiliaries. Under these circumstances, a medical man performs an autopsy on the body and, from his observations, he will deduct his conclusions; thus, the judge increases his understanding by the more refined and trained education of the medico-legal expert. Only, just as the judge should be circumspect as to his own reasonings, the consequences that he deducts from his personal observations, from the impressions that the given affair produces on his own mind, in the same way he should be circumspect of the reasonings and the impressions of his auxiliary, and for this reason it appears to me that the Court should never be obliged to adopt the conclusions of the expert or experts appointed to enlighten it on the question.

It is none the less true that the work of the medical expert is a particular form of evidence, which should not be confounded with other forms of evidence, properly speaking, but it is, in a way, analogous to other forms of evidence because it is based on the supposition of a presumed extraordinary knowledge offered by the physician appointed by the Court to the medicolegal examination.

From this it results that experts enjoy a particular function which should not be confounded either with that of the Court, or, and especially, with that of the other witnesses. The part played by the medical expert should, we believe, have a certain similarity to that of the jury, and like the latter, the expert should be empowered to render his personal judgment upon the question; but this judgment should never be imposed upon the authorities who are to apply the law when the verdict of the jury definitely decides the question of guilt.

As to the ordinary witnesses, they should differ totally from the medical experts, although in the courts of the United States there is no difference. It is the opportunity alone which creates the witness, namely, his fortuitous presence on the spot at the time of the crime; or, on the other hand, it may be his relations with the accused which necessitate his presence on the witness stand in order to relate what he may know directly or indirectly about the case. But the witness should only have a single duty, and that is to state what he has seen or heard, and he should not be asked to emit any thoughts that were suggested to him from what he saw or to offer any conclusions that he may have drawn therefrom. In other words, he should not have the right to emit any judgment on his own part.

The expert, on the contrary, does not go about his mission from circumstances or chance, because, in a large majority of instances, his cognizance of the affair only results by his appointment to proceed as an expert; this mission is confided to him on account of his special knowledge and the power that this gives him to enlighten certain points which, without him, would remain obscure. The expert should then be the object of a choice, and his mission is twofold; it is not limited to the discovering of circumstances that the Court would be unable to discern itself, and the expert should also give his appreciation of facts and draw conclusions from the knowledge he obtains from his capacity as expert. He should give his personal opinion to the authorities and in this way he passes a judgment in every sense of the word.

From what I have said I do not wish to impart the idea that experts should exercise the functions of a judge. If, in all conscientiousness, they render a judgment on the case because they have solved some or all of the difficulties which are submitted to them, this judgment, from the point of view of law, should merely have the character and the strength of a simple opinion. Without doubt this opinion, being given by men who are well educated and have specialized themselves in certain branches of medical science, should have considerable authority, because from the fact of the special knowledge of the expert the Court should be guided by his opinion on matters which it is impossible for it to pass upon. However, the Court should be always free to act, and it is the duty of the judge to carefully examine and to discuss the results obtained by the expert and use the best judgment in his power in the control of the conclusions rendered by the expert; and what is still more, in my way of thinking, the Court should not be obliged to abide by the opinion of the first expert if there is any doubt as to the latter's opinion.

Medical expert work in criminal matters does not differ in its object from that in civil procedures. Both have the same end in view, namely, to enlighten the judge on points which would otherwise remain obscure. As human knowledge has become extended, both the Courts and the medical profession have been obliged to become more and more specialized in certain branches. Each day the horizon of the medical art broadens, and as human intelligence is not infinite, it is necessary to restrain one's scope and only cover a lesser territory, if the latter is to be thoroughly explored. Consequently, science in general has become divided up into a number of subdivisions. A few centuries ago the practice of medicine was represented by the physician and the chemist; to-day it is divided among surgeons, physicians, accoucheurs, neurologists, etc., and consequently one should have recourse to these various specialists as experts in the various branches of medicine.

On the other hand, as each branch of science becomes more developed and complete, one should be more rigorous and more particular in the selection of an expert. A Court which formerly would have been satisfied with the personal opinion of an expert in a given case is to-day far more severe. Knowing that certain physicians have given special attention to a given question, the Court naturally should consider them more competent in the matter, and, therefore, it is to them that the expert evidence should be confided. Then, again, these examinations, while becoming more numerous and complicated, at the same time become more exact. Consequently, at the present time, particularly in criminal cases, the law has in its hands an instrument which each day becomes more perfected and which should result in a decrease of the occurrence of judicial errors.

If I am rightly informed, the laws governing medical expert testimony in France that are at the present time in force are represented by the text adopted by the Chamber of Deputies in 1898 and are divided into eleven articles, the last two of which I will not give, as they merely concern the salary, etc., of the expert witness.

The French law is as follows:

"Article 1. The list of experts allowed to practise their art in criminal and correctional matter is to be made out each year for the following year by the Courts of Appeal, etc. . . . The experts are classified into categories on this list, which only include members who from their special knowledge rightfully belonging to them, with the exception of those which are referred to in Article 2.

"Art. 2. The list of physicians and chemists admitted to the practice of medico-legal expert work for the courts is made up each year for the following year by the Courts of Appeal, the Procureur Général heard on the proposition of the civil courts, the faculties and schools of medicine, pharmacy and science. The professors and other members giving lectures in the said faculties, the physicians, surgeons, accoucheurs and chemists of the hospitals in cities where the faculties or schools of medicine exist, the physicians of hospitals and public asylums for the insane, and members of the Academy of Medicine will, from their appointments, be placed on this list; they will, as far as possible, be classed in groups according to their specialty.

"Art. 3. The examining judge, or the officer designated to take his place, appoints from the annual list, made up in conformity to the preceding articles, one or several experts if it is necessary to undertake distinct scientific researches. The selection of the expert or experts is immediately communicated to the defense, who has a right to choose on the annual list which is submitted to him an equal number of experts. This choice of experts should be made within three days from the time that the notification is made to the defense. In the case where the defense has not replied within this lapse of time, the judge appoints a second expert, as is stated in Article 5. When there is urgency in proceeding to the expert examination, and this is ordered by the President of the Court of Assizes, the defense may at once avail himself of his right to select an expert if he so desires. If there are several accused in the case, they should decide together in order to make their appointment of experts.

"Art. 4. The experts designated in paragraph 2 of Article 2 can only be selected if this measure, which must be justified by the gravity of the affair, is authorized by a decree from motive on the part of the President of the Court or the President of the Jurisdiction. The aforesaid decrees are not subject to any appeal.

"Art. 5. If the author of the crime is unknown, or if the criminal has escaped, the expert work ordered by the examining judge should be confided to at least two experts, selected from the annual list.

"Art. 6. A single expert cannot proceed with his work excepting when the criminal formally renounces a contradictory expert testimony and accepts the expert appointed by the examining judge.

"Art. 7. The experts appointed by the examining judge and the defense enjoy the same rights and prerogatives. They proceed together in all the technical operations, and their conclusions are written in a common report after having contradictorily discussed them.

"Art. 8. If the experts are of divided opinion, they are to designate a new expert who should give the casting vote. If a final conclusion is still lacking, the appointment of the expert is made by the President of the Court or by the President of the Jurisdiction.

"Art. 9. In spite of the terms of the preceding articles, the procureur of the Republic and the examining magistrate may, in cases of extreme urgency, especially if they have gone to the place of crime in order to catch the culprits *in flagrante delictu*, or if the evidence and proofs of the crime are on the point of disappearing, appoint provisionally a physician whose name is not upon the annual list. This provisory expert will proceed with the expert work and, if necessary, preserve the articles to be submitted for expert examination, and he shall make out a summary report, which, after having been approved by the examining magistrate or the procureur of the Republic, shall be transmitted with all the other documents to the experts, who shall at once be designated in conformity to the rules laid down in the above articles, unless the first examination has been considered sufficient by common agreement between the examining magistrate and the defense."

As will be seen, the French courts have their own appointed experts, these being made annually and, at the same time, the defense has also the right to select his own experts, but they must be taken from the list submitted to him by the Court. Although the law governing the medical experts in France is by no means perfect, and some changes are greatly wished for there, nevertheless the practice of expert work, even as it is in France, seems to me greatly superior to the methods employed in the various states in the Union and in England. Among the legislations of Europe who have more or less directly undergone the influence of the French Code, some have remained faithful to the principles laid down by the legislators of 1808, while others have gone beyond France in their work at perfecting their laws and, under the domain of new pre-occupations, these have undergone more or less radical changes concerning the defense, especially during the collecting of evidence in the case. Contradictory expert work is not permitted in Italy, nor in the Code of Neuchâtel of 1893. In Italy, the defense may call experts at the time of the trial, but, during the collecting of evidence, he cannot interfere. In the same way, at Neuchâtel, it is the Court who appoints one or several experts as it may see fit. The defense cannot interfere with the expert work any more than he can in any of the other processes in the collecting of evidence. Only the system inaugurated in 1875 is kept up, which consists in an intervention on the part of the defense, before the close of the collecting of evidence, and his permission to offer new evidence. Likewise, there is no question of representation of the defense as far as medical expert testimony is concerned, either in Bâle-Ville, or in the cantons of Geneva and Vaud.

The Austrian Code of 1873 does not allow contradictory expert work. In principle, this is done by two experts, and by only one if the case is unimportant. The choice of the experts is left to the examining judge, but the latter should give preference to experts chosen by the Courts, excepting under certain circumstances. The judge gives notice of his choice to the prosecution and the defense in order that they may object if they have any motives for so doing. The judge may order a new expert examination by other physicians if the first report appears to be obscure to him. If, in his opinion, the obscurity is due to any fault on the part of the experts, or if their conclusions do not appear to him correctly deducted, he may choose others. And, lastly, if the expert examination relates to a point of medicine or of chemistry, he may seek the advice of one of the faculties of medicine existing in those countries represented by the Reichsrath.

The defense has no right to intervene in the expert work, and the only acts in the collecting of evidence in which the defense may assist is the perquisition at the domicile and the perquisition of papers. Consequently, not only has the defense no right to be represented by an expert, but his lawyer or lawyers also have no right to intervene during the expert examinations.

In Belgium, the criminal code reproduces almost entirely what is found in the French Code. Contradictory expert examination is very ardently wished for, and de Ryckère, military auditor, has asked for a change in the law whereby two experts shall be appointed, one by the Court and the other by the defense, and that their conclusions should be given in common after a discussion between the two experts. This system has also its opponents, and among these is Dr. Lebrun, a medical expert of Brussels. He, however, desires certain reforms; among others, the complete reorganization of the teaching of legal medicine and the formation of a high medico-legal committee, which shall be the sovereign judge in medicolegal questions.

The principles of the French Code of criminal procedure have, however, been given up on one point. This exception results from the law of April 20, 1874, relative to preventive detention. According to Article 25, no corporal examination can be ordered, other than in cases of *flagrante delictu*, if it is not ordered by the Council Chamber, the Chamber of Accusations or by the Court in which the case is being reviewed. The defense may, at his expense, select a physician to be present at the examination of the experts. It would appear, however, according to a Belgium expert, Dr. Vleminxq, that this absolute right allowed the defense of choosing his expert to represent him at the trial has not given any very brilliant results, because, after the lapse of three years, this system ended in a very disagreeable confusion.

The German criminal code of 1877 contains detailed orders relative to expert examinations. The judge appoints the experts and designates the number. He can only select the officially appointed experts, excepting in exceptional cases. During the collecting of evidence the judge decides whether or not the experts shall give their opinion verbally or in writing. He also decides whether another expert examination shall be made in the case where he finds the first is insufficient, and in very serious affairs, or if the experts do not agree among themselves, he may consult the authorities officially appointed for special cases.

The defense cannot intervene in the expert examination. He may demand that those experts that he has the intention of calling at the trial be summoned to appear the day of the expert examination. If the judge rejects this request, the defense may summon them at his own expense. But the same article of the Code gives a very serious restriction to this right. The experts of the defense, it says, may assist at the expert examination "*unless their presence is of a nature to hinder the work of the officially appointed experts.*"

Beside this right given to the defense to be represented at the expert examination by his own experts, the German Code, under certain circumstances, allows the defense to assist himself at certain expert hearings or operations, this right having no restrictive clause such as the one mentioned above. This instance is indicated in Article 191 of the Code and is admissable when it is supposed that the expert or the witness cannot appear during the trial, or when his appearance would be a matter of particular difficulty on account of the distance of his residence from the place of trial.

During the trial the defense may summon his experts, but the President of the Court has a right to refuse him this privilege. Both sides and the judges are privileged to ask questions. The opinion of the experts may be read, and if this opinion emanates from some special authority in the matter, the Court may request this authority to delegate one of its members in order to uphold its opinion during the trial. This is found in Article 255.

It may consequently be seen that in Germany there is no contradictory expert witness, properly speaking. Without any doubt the defense may have the experts, appointed by the judge, observed during their operations by his experts, but the judge can always prevent the application of this law on account of the last paragraph of Article 193 of the Criminal Code.

Strange as it may appear, the most liberal legislations relative to the defense are to be found in the Code of Penal Procedure of the Argentine Republic and the Spanish Code of Sept. 14, 1882. According to the Code of the Argentine Republic, the defense may always be represented during the collecting of evidence and make their own observations, only his representatives must withdraw when the official experts discuss their findings.

The Spanish Code includes a system which is very similar to that advocated some ten years ago in France, by Cruppi. It, however, differs in two important points, namely, the defense is obliged to pay the cost of the appointment of his experts and only has the privilege of selecting one, while the Court may appoint several. Besides these two points, the Spanish Code presents many other interesting questions. For example, the question of expert examination is treated quite completely. Every piece of expert work, according to Article 459, must be performed by two experts, but exception is made in the case where one of the experts resides in a locality where it is impossible for him to summon a second expert without great inconvenience. This exception is similar to that made in the German and Austrian codes.

The appointment of the experts is made known to the prosecution and the defense every time that it is possible. This is found in Article 466. In every instance when the expert work cannot be given at the preliminary hearing, the prosecution has the right to appoint an expert who will be present at the expert operations, and the same right belongs to the defense. If the defense is composed of several persons, they must arrange among themselves for the selection of the expert (Article 471). Article 356 relative to expert chemical work shows how this examination should be conducted. It states that the defense has the privilege of appointing one expert who will work in conjunction with those appointed by the judge.

If the experts do not agree, and if their number is even, the judge shall appoint another. The expert operations which have already been performed should then be repeated if it is possible and any other new ones considered proper will be undertaken with the newly appointed expert. If the repetition of the first expert work and the performance of new expert operations are not possible, the newly appointed expert will simply deliberate with the others on the results already obtained and will formulate his conclusions with the expert or experts whose opinion he adopts, or he will render his conclusions separately if his opinion differs from the others.

BURSITIS SUBACROMIALIS, OR PERIARTHRITIS OF THE SHOULDER-JOINT. (SUBDELTOID BURSITIS.)

BY ERNEST AMORY CODMAN, M.D., BOSTON.

(Continued from No. 20, p. 648.)

Case XII. *Adherent case in Irish laborer.*

Duration, four months.

Treatment. — Manipulation and exercises, with short use of abduction splint.

Case illustrates typical signs of partial rupture of supraspinatus tendon. Mr. D. D. Age thirty-three. Laborer. Massachusetts General Hospital. July 24, 1906.

Strong, well-developed laboring man. About four months ago he fell on a railroad track and hurt his left shoulder. Did not notice much pain at the time, but after a couple of days it became severe and at the end of a week he came to the Massachusetts General Hospital, Orthopedic Department, for relief. The motion was then limited and painful. He was treated with adhesive strapping and Zander exercises until May 17, when the disability had become so much worse that ether was given by the orthopedic surgeon and the adhesions broken up. Since that time he has had occasional treatments on the Zander apparatus without much improvement.

The signs and symptoms, when seen by me on July 24, were characteristic of Type II, except that there was a fair arc of passive motion and but little active abduction. The poor fellow had been obliged to work right along between his treatments and the compensatory motion of his scapula was well developed so that he constantly used his scapula as part of his humerus.

On Aug. 1, 1906, under ether, I again manipulated the arm, finding the adhesions few and light. The arm was fixed in abduction for two days and convalescence was normal with slight pain and good motion. The adhesions did not form again, but for some weeks there was great difficulty in getting active abduction, although passive abduction could be easily obtained.

At this time he offered a beautiful demonstration of the lack of function of the supraspinatus. When he attempted abduction his powerful deltoid would draw the head of the bone up under the acromion and then the well-developed thoracic muscles would abduct the scapula on the thorax, but in so doing would abduct the humerus and scapula. If, however, before attempting to abduct the arm, he gave it a little help with the other hand, so that the motion of abduction could be started and the humerus could obtain a fulcrum on the glenoid, the whole arc of motion would occur in a normal manner, except for the jerk as the irregularity of the tuberosity passed under the acromion. By giving the arm a swing he could start the motion and obtain abduction, but with any weight in his hand he could not abduct from the straight position. External rotation was good. At this stage he was lost sight of. He was able to work.

Case XIII. *Adherent case in an exhausted old woman. Operation for relief of pain.*

Duration, five months when first seen. Constitutional complications.

Treatment. — Manipulation under gas and fixation in abduction.

Result. — No material improvement in shoulder, because severe constitutional symptoms supervened. Death six weeks after operation, with symptoms suggesting thrombosis due to rupture of axillary vein at operation.

Mrs. C. W. Fifty-nine years. Referred by Dr. J. J. Putnam, Nov. 24, 1906. Anemic, feeble, flabby old woman, in a desperate condition of nervous exhaustion from pain and lack of sleep. She had been fairly strong until one year before, when she had lost her daughter after a long and tedious illness. After this she broke down completely and has been in a very poor condition since. Five months ago she began to have progressive pain and stiffness in the left shoulder. Her local physician had used electricity, vibrators, massage, etc., without relief. She was becoming much debilitated by loss of sleep, pain and despondency. On Nov. 10, 1906, her local physician broke up the adhesions under ether and applied an abduction splint. Little relief followed and the patient's condition became still worse. There was considerable reaction in temperature and the patient's courage entirely gave out, so that she became unmanageable. The doctor was obliged to give ether again about Nov. 17 to reapply the splint. No relief followed, so that on Nov. 24 the patient was sent to Boston to be under my care.

Her condition was then pitiable in the extreme. Her eyes were deeply underlined and her appearance the picture of apprehension. The shoulder was exquisitely tender and the slightest attempt at motion caused the expression of agony. It was difficult to tell whether this was due to actual extreme pain or to the complete loss of control from pain already suffered. She had needed a considerable amount of morphine during the past two weeks.

The limitations of motion were characteristic of Type II, but the exquisite tenderness made the condition also exhibit the characteristic spasm of a severe grade of Type I. Although the spinati, deltoid and triceps were much atrophied, there was decided edematous swelling of the subcutaneous tissues, particularly about the posterior aspect of the arm and shoulder. There were no signs of fluid in the joint or in the bursa and the x-ray showed no organic disease of the bone. The forearm was also atrophied and the fingers held in semiflexion. They could barely be moved voluntarily and the grip was very weak. The flexor muscles of the forearm were tender and it seemed to me that the condition was practically the acute stage of Volkman's ischemic paralysis. She could not touch her hand to her forehead even by bending her head down, unless she used the right hand to lift the left one; even then it was difficult for her to raise the clasped hands to her forehead. Yet there was no absolute paralysis of any muscle. A certain extent of voluntary motion could be demonstrated in each.

Evidently her condition precluded interference and I simply put her to bed without apparatus or local treatment of any kind, except gentle massage of the adjacent parts. Everything possible was done to improve her general condition and a most careful examination made to exclude any organic disease. Nothing was found except a systolic cardiac murmur.

After ten days' rest in the hospital her condition had somewhat improved. The febrile reaction which had followed the manipulation before she came to me had practically disappeared. Pain, however, still continued and it was impossible for her to obtain even a fair night's rest without morphine. She was anxious to have something done and at length I was persuaded to repeat the manipulations. On Dec. 3, under gas, I gently manipulated the arm. No incision was made. The adhesions were light and yielded easily, too easily. I think that I tore the attachment of the tendon of the supraspinatus. As a result, in complete abduction the head of the bone could be almost dislocated into the axilla and in abduction fell away from the acromion. No abduction splint was at first applied, but a posterior splint was bandaged to the forearm and also to the head of the bed, thus abducting the humerus.

The reaction following the operation was marked. The pulse, which previous to the operation ran at 90, rose to and remained at about 120 for four days. It then became irregular, occasionally dropping to 90, and ranging most of the time between 110 and 130. This continued until her discharge from the hospital on Dec. 28, and probably until the time of her death on Jan. 14, 1907.

The temperature continued normal for three days after the operation, then rose suddenly to 101 on the afternoon of the third day; from that time on it was variable, ranging from 97.2 to 102.2, sometimes being practically normal for several days together.

After the operation there was much pain and the patient became extremely hysterical, almost maniacal. Morphine was necessary every night. The arm appeared paralyzed, but when the patient was sufficiently coaxed it could be demonstrated that no single muscle was paralyzed. The shifting edema in the hand and shoulder became more than ever noticeable and would gather in the most dependent part within an hour or two and would leave as rapidly when the part was elevated. For instance, when she sat up, the hand and forearm would swell; when she lay flat and the hand was elevated, the shoulder would swell. At the time I attributed this edema to the leakage of synovial fluid from the ruptured capsule. There was no sign of thrombosis in the peripheral veins, but the veins of the neck and side of the chest became unduly prominent.

From the time of the operation until her death she complained of attacks of abdominal pain. These attacks were usually accompanied by a rise in temperature and abdominal distention. They were frequently but not always relieved by enemata and cathartics. There were no localizing abdominal signs, as tenderness, muscular spasm, rigidly or palpable masses. At one time there was an attack of jaundice which lasted several days. There was no local indication of disease of the gall bladder. Meantime there was slight improvement in the condition of the arm in response to most careful daily manipulations and applications of the faradic current, etc. I have never taken care of a more difficult case nor worked harder over one. By Dec. 28 I succeeded in getting the patient so that she could go without morphine, could walk about with the arm swinging at the side and could use the fingers fairly well. Abduction could be performed passively, but not actively, as the supraspinatus was evidently out of commission.

She then returned to her home with careful detailed directions for treatment.

I am told by her physician that in spite of slight improvement in the use of the arm the local edema continued. The attacks of abdominal pain came on again. At times there was also complaint of (angina-like) pain in the left side. On Jan. 14, 1907, she had a convulsive attack and suddenly died. No autopsy was obtained.

It seems to me that it is likely that thrombosis of the left subclavian may have been caused by the manipulations. The shifting edema of the arm, the development of dilated thoracic veins, the sudden rise in temperature on the third day, the irregularity of pulse and temperature without local signs, the vague but severe abdominal pain, the jaundice, the angina and finally the death in a convulsive seizure all seem to me to point to this diagnosis. A previously existing endocarditis cannot, however, be ruled out.

During the time she was under my care the physical condition was so masked by her extreme hysterical state, which was almost mania, that I did not suspect either thrombosis or endocarditis. I attributed the symptoms to the extreme pain, loss of sleep and deep despondency.

Case XIV. *Adherent case in thin anemic old woman* *with chronic nephritis. Duration, six months when first seen.*

Treatment. — Manipulation under ether and fixation in abduction.

Result. — Did well for two weeks, when symptoms returned worse than ever. Constitutional breakdown so that treatment had to be abandoned. In spite of this, recovery from shoulder symptoms in about a year.

Mrs. E. A. Age sixty. Referred by Dr. J. J. Putnam on Dec. 21, 1906.

Thin, anemic, dried-up-looking old woman. Has always been rather feeble and has had a variety of nervous troubles as well as "gastric fever" and a number of other periods of illness. About ten years ago had a similar trouble in left arm. Present trouble began in July, 1906. It came on suddenly after an attack of "pleurisy" when she was "run down." She had not been well since April. Stiffness and loss of strength were noticed before pain. Four months ago pain became severe. At this time she had fever, vomiting and chills. For the last two months she had been under Dr. Putnam's care and a slight improvement had been effected by the use of electricity, baking and electric light baths. She had recently been much depressed and discouraged, as the pain had prevented regular sleep, and in consequence she had become quite debilitated.

Examination showed the characteristic limitations of Type II. There was great atrophy of the spinati and also more or less shrinkage of the arm muscles, especially of the biceps and deltoid. The pain extended from the neck to the wrist. An x-ray showed no disease of the bone.

Besides the trouble with the shoulder she also complained of occasional attacks of dizziness. In two of these attacks she had fainted; in one she had fallen. The urine showed a low specific gravity, with a few fine granular casts and a trace of albumen. The second pulmonic was accentuated. There was no anasarca.

Operation at the Eliot Hospital, Dec. 27, 1906. Under nitrous oxide the adhesions were broken up and the arm abducted by tying a forearm splint to the head of the bed. After the operation she did exceptionally well, and was sent home on Jan. 8, 1907. During her stay in the hospital the progress was uneventful and when the arm was abducted so that the sore point was under the acromion she could move it freely. In this case there was, however, more than usual difficulty in getting the arm down past the critical point and *vice versa* in getting it up again. There was also much nausea after the operation and for several days afterward she complained of abdominal pain of much the same character as that in Case XIII. At the time she left the hospital, Jan. 8, she could move the arm comparatively freely, and though some pain still continued and disturbed her night's rest, she was progressing favorably.

After returning home improvement continued for about a week, when intense pain began again and she became unable to continue the exercises as I had directed. Her family physician, Dr. Shaw, was called and found it necessary to give opiates to obtain any relief. The shoulder and whole arm became exquisitely tender; edema appeared about the elbow and wrist. Great mental depression ensued, the pulse became weak and the clinical picture became one of extreme mental, physical and nervous exhaustion. It was obvious that nothing further could be done to improve the shoulder until her general condition was better. I saw the patient from time to time with Dr. Shaw until Feb. 19, 1907, and made some futile attempts to devise splints to rest the arm enough to relieve pain. At this date, thanks to Dr. Shaw, the patient had recovered enough strength to move to the home of relations in the country where conditions would be more favorable to the return of her vitality. The shoulder was then a characteristic case of Type II again. Evidently the original cause, whatever it was, had again started up at the time of the exacerbation on Jan. 14.

I am indebted to Dr. N. K. Noyes for the following additional notes about the previous history and present condition of this case:

"*Dear Dr. Codman*, — Your letter of March 31 at hand and I shall be very glad to give you what information I can. I am also very glad to have had the pleasure of reading your notes on Mrs. A.'s case, when she was under your care, for I have heard a good deal about the operation and her subsequent sickness, but could never get from the patient or her daughter a very distinct idea of just what happened at that time. I have known Mrs. A. for the past ten years and occasionally during that time she has been under my care, never for any serious illness till this winter, and usually for only an occasional visit, when she would come to my office or call me to her home in Marshfield, when she lived there. Ever since I first saw her, ten or more years ago, she has been the 'thin, anemic, dried-up-looking old woman' you describe. I should have added poorly nourished as well, for that has been my diagnosis always that she was 'starved.'

"She has always complained of pain. I have no notes back of 1903, but at that time I put down on the record card, among other complaints, 'pain in the extremities.' In 1904 I find 'pain in the extremities,' pulse 100, etc. In March, 1905, I find a note made at a call at Marshfield, 'Complained pain in right side of head, of great weakness' and of looking 'blue.' Has had some palpitation and short 'breath.' About this time weight 91 pounds 11 ounces and pulse 124. May 12, 1906, I find this note: 'Has had fairly good winter. Just lately was ill and called in the local doctor, who said she has 'rheumatism.' Has had a 'sore pain over region of liver and a good deal of smarting and burning pain over right eye and in both shoulders and arms and down back of neck. Weight, 92 pounds 10 ounces, pulse 98 and fairly good character.' All this I appreciate has little interest for you except that it shows that for years she has had pains, evidently of nerve origin.

"If my notes had gone back ten years farther they would have read about the same. I do not think I saw the patient from the spring of 1906 till December, 1907. She had then been poorly for some time, had had a good deal of trouble with her stomach and was barely able to be about the house. At that time she said she had a good deal of 'neuritis pain in her arms and shoulders,' but not more in the right than the left. Under general tonic treatment and forced feeding she improved a good deal. But she had attacks of extreme nervousness and at times was troubled with insomnia and had a good deal of pain in arms and shoulders. At other times the pain would be in her stomach or bowels and some times in her face and head. Late in January, 1908, she had several spells of being very nervous and excitable and would walk constantly up and down the room or, if she went out of doors, across the fields and back. Then about the first of February she suddenly seemed to go all to pieces. All her nervousness disappeared and she preferred to remain in bed and took large quantities of nourishment and slept a good deal. After several weeks of this condition she began to show evidence of mental weakness and could not talk quite straight, mixed her words and names and even imagined things or at least told of things which were not real. This condition grew steadily worse and about the middle of March she developed a temperature which at its height reached 103, and for about forty-eight hours she was entirely unconscious. At this time the right arm was somewhat swollen and any attempt to move it gave rise to evidences of its being painful. Much to the surprise of her family and friends and I must confess of myself she has slowly rallied from this condition and is brighter mentally than she has been for a number of weeks. She uses the right arm almost as well as she does the left and does not complain of excessive pain anywhere, although there is some of the 'neuritis pain,' as she calls it, at times' though never steadily or in any one place.

"She is still very weak and is more nervous than at one time, but she is eating better and sitting up for a few minutes at a time; the urine is of a low specific gravity, light in color, and there are some casts. Evidently there is an interstitial nephritis.

"So far as her arm is concerned I do not see much difference between the right and the left. This patient had had a good deal of mental worry about family affairs for a period covering a good many years. She was one of six children, five of whom are living. Two are fairly well and of the other two, beside this patient, one is a cripple with some form of chronic rheumatism and the other, who looks very much like the sister and has the same cadaverous aspect, is more or less an invalid with chronic asthma. I do not think this patient has ever been addicted to morphine, nor do I attribute her symptoms due to hysteria. There probably has been a nephritis for some years."

DISCUSSION OF TREATMENT BY RUPTURE OF ADHESIONS UNDER AN ANESTHETIC.

Many authors in writing on these cases as peri-arthritis have advised rupture of the adhesions under an anesthetic to hasten recovery. This treatment was introduced in Boston by Dr. J. J. Putnam twenty-five years or more ago, and has been in vogue at the Massachusetts General Hospital and other clinics until recently. In some cases this operation undoubtedly shortens the period of convalescence by many months. There are two main objections to it. As I pointed out in my former paper, it may tear the normal joint structures more easily than the dense adhesions in the bursa, and thus rupture the atrophied and stiffened supraspinatus or the other short rotators. I believe that I have had this happen at least once. (Case XIII.) The brachial plexus and the axillary vein are also in danger.

The second objection is that in those cases where the adhesions alone are ruptured there is a tendency for them to reform again, since the soreness incident to the manipulations starts scapulo-humeral spasm once more and leaves the raw surfaces in contact.

It was the apparent unreliability of this treatment which originally led me to investigate these cases. In my paper in 1906, I recommended the use of an abduction splint (Fig. 11 and legend) to obviate this difficulty, with the idea that in this position the abraded surfaces would be separated and apposed to healthy surfaces to which they would be less likely to unite. Cases VII, VIII, IX and others were treated by the use of this splint. After the adhesions were broken it was applied as described in the former paper and allowed to remain on from one day to one week. Once or twice a day it was removed and the arm gently moved without allowing the tuberosity to come out from under the acromion. Usually the patient could hold it actively in complete abduction even on the first day. In some cases the ability to go through the full arc of abduction was thus obtained from the very first, much to the surprise and satisfaction of the patient. In most cases, however, in the second or third week there came a discouraging time when the soreness again made motion difficult. At this time it required much time and encouragement to make the patient keep up the motion. In some cases I again used the splint for rest during the day, and took it off at night.

On the whole this method of treatment, although invariably efficacious and more satisfactory than simple rupture of the adhesions, was a very arduous one for the surgeon, and caused a good deal of complaint from the patients. In many cases the patient's friends, on seeing the poor arm constantly held up in the air, suffered more than the patients themselves. The splint, in order to be comfortable, required frequen adjustments, which the nurses and house-officers were not experienced enough to give.

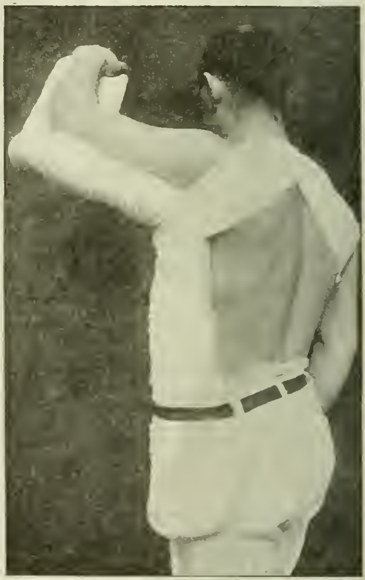

Fig. 11.

Showing the abduction splint in position, the patient standing. It is held by a figure-eight bandage which crosses behind the shoulders and by a belt about the hips. The arm is at rest.

Description of splint. — The frame of the splint which I use is made of iron wire (diameter, one-quarter inch) stiff enough to maintain its form and to carry the weight of the arm securely. Sufficient cotton wadding to thoroughly pad it is bandaged over it and the whole covered with cotton or linen cloth. The general shape is shown in the photograph. It should be just long enough to extend from the axilla to the seat of the chair on which the patient sits. It is best held in position by a belt around the pelvis and a figure-eight flannel bandage about the shoulders crossing back of the neck. A pad should be placed in the opposite axilla to prevent excoriation of the skin by the bandage.

During the first twenty-four hours and afterwards, if worn at night, the arm should also be lightly bandaged to the projecting part of the splint. Additional security is given by the application of a swathe which may be pinned to the bandage of the axilla.

When properly adjusted it is perfectly comfortable. Unless it is comfortable it is useless. The use of the splint is not essential and is even harmful if not skillfully cared for.

For this reason, and because I have heard of serious complications (paralysis) in the hands of other surgeons, I have recently endeavored to obtain abduction by tying the patient's forearm by means of a forearm splint to the head of the bed. This is almost as efficacious, although also requiring a good deal of attention and obliging the patient to keep his bed for several days. As will be shown in the discussion of Group C, it is doubtful if even this is necessary, for Baer and Painter claim better results than mine without the use of abduction, and in a number of cases of Type III. I have incised the bursa and then allowed the arm to heal in abduction, without loss of motion.

In considering the methods of treatment under Group B we may then say that as a whole they diminish the period of pain and convalescence, but are far from satisfactory, as being painful to the patient and requiring a disproportionate effort on the part of the surgeon and attendents.

(To be continued.)

Boston City Hospital.

CLINICAL MEETINGS OF THE STAFF, DEC. 19, 1907; JAN. 16, FEB. 20 AND APRIL 16, 1908.

I. AN UNUSUAL COMPLICATION OF EXOPHTHALMIC GOITER. II. BLOCKED PUPIL FROM SYMPATHETIC IRIDOCYCLITIS.

BY ALLEN GREENWOOD, M.D.

Case I. Dr. Greenwood showed a woman of fifty-two years who had noticed a protruding of the eyes for the past three years, the eyes finally becoming so prominent that the corneæ could not wholly be covered by the eyelids. Two weeks before entrance, Dec. 12, 1907, she had la grippe with nasal disturbance and evidences of involvement of the left antrum. Two days later the left eye became more prominent and very much inflamed.

On entrance, examination showed a poorly nourished, rather anemic woman, with rapid pulse, enlarged thyroid and exophthalmos. Right eye showed slight injection of conjunctiva, vision $\frac{20}{20}$, exophthalmos sufficient to prevent entire closure of the lids, leaving lower part of cornea exposed. Left eye showed extreme exophthalmos with purulent iridocyclitis. In spite of treatment this eye went on to panophthalmitis requiring evisceration on Jan. 8. On Jan. 19, the right eye became more injected and showed a tiny ulceration at the lower limbus. In spite of treatment with argyrol and atropine, and frequent cauterization with tincture of iodine, the ulcer spread until it involved the lower third of the cornea, then the ulcerative process stopped and at the end of a month had entirely healed, leaving a useful eye.

In this case the primary infection of the cornea probably came from an attack of influenza but the extreme exopthalmos, allowing exposure of the corneæ, was undoubtedly the cause of the destruction of the left eye and the severe ulceration of the right eye.

Case II. A young man of twenty-two who had received a perforating injury to the left eye when four years old resulting in blindness. A year later inflammation started in the right eye and in a short time vision in that eye was reduced to perception of light. When twelve years old the left eye was removed to relieve pain.

At the present time the right eye shows possible light perception with very faulty projection.

The case was shown to emphasize the necessity of removing eyes blinded by perforating injuries, especially in children. The younger the child the more urgent the necessity, it being far better to remove, unnecessarily, a great many sightless and often disfigured eyes than to have a single child blinded by the neglect to take this, the only safe precaution.

I. GONORRHEAL RHEUMATISM. II. STREPTOCOCCUS EMPYEMA.

BY E. M. BUCKINGHAM, M.D.

Case I. Dr. Buckingham showed one, and described another, case of gonorrheal rheumatism admitted to the hospital at the same time. Each had rheumatism. In each the disturbance had settled into a limited number of joints. Each was throughly treated with salicylates without results. One had urethritis; the other, vaginitis, and each had gonococci. Each was then treated with antigonoccoccus serum, at first every fourth day and then every day. Pain and inflammation generally steadily grew less from the beginning of this treatment, and they are shown for what they are worth, the value of this serum not being as yet a settled thing.

N. B. The later history was not particularly encouraging, progress being very slow.

Dr. Buckingham showed a case of streptococcus empyema. This woman had measles in February, and in the course of it developed a bronchopneumonia, together with a pleuritic effusion, which was aspirated by Dr. McCollum. The fluid removed was clear. On ceasing to be contagious, she was transfered to my service. She had then consolidation at both apices, sputa containing tubercle bacilli, and a large pleuritic effusion. She was some months pregnant. Nearly a quart of thick pus containing streptococci was removed by aspiration. A permanent opening was considered in consultation with Dr. Thorndike, but was decided against. It was believed that she would take ether badly and that she would die in any case, while she would be more comfortable without a discharging wound. Aspiration had caused considerable shock. The fact that tubercular cases do badly after operation was also considered. She has been fed, given whiskey and kept in the open air. I call attention to her good general appearance. She has ceased to spit and the temperature, which was ragged and subnormal, has become normal. Ten days ago she was again aspirated, this time without shock, and getting much less pus than before. It still contained streptococci, but a specimen injected into a guinea pig has not given much reaction. The question of operation may come up in the future. I had supposed that in order to have a hopeful outlook for an empyema without operation, three conditions were needed: The patient must be a child, the pus must be due to pneumococci and aspiration must be early and thorough. None of these conditions, except, perhaps, the last, existed in this case.

A CASE OF ANTHRAX.

BY JOHN BAPST BLAKE, M.D.

Dr. John Sennott, of Cambridge, noticed a pustule on the face of this child aged four years and otherwise perfectly well. In twenty-four hours the pustule had enlarged, considerable edema surrounded it and there was slight elevation of pulse and temperature. Twelve hours later the lesion presented a brownish crust, slightly umbilicated, surrounded by an indurated ring, and a marked edema of the entire right face, closing the eye, extending to the scalp above and the neck below; the eyelids were particularly edematous, and it was not possible to obtain a view of the cornea. Temperature was 104.5°, pulse 160. Upon hearing these facts by telephone, immediate operation was advised and accepted. The lesion was over the right malar bone, its center point being about 2 cm. below the outer canthus; there was little or no discharge; the child was conscious and not fretful. Under ether the entire lesion was incised, all indurated tissue being removed down to the bone and up to the conjunctiva. A gaping oval wound was left 4 cm. long by 3 cm. wide, the edges of which were slightly approximated by two silk gut sutures loosely tied. Moist dressings were applied but omitted after twelve hours, and the wound was left open. Convalescence was rapid and uneventful, and at present (six weeks after operation) the wound has healed by granulation, and a plastic, which at first seemed inevitable, will probably be unnecessary, as the scar does not evert the lower lid.

The source of infection in this case was unusual. For several days no hint of the origin could be obtained in spite of careful and painstaking investigation. Finally it was discovered that an older brother of the patient had found in the street an uncured goatskin or sheepskin, which had fallen from a caravan; he brought the skin home in a bag, but after a day his mother threw the skin, which smelled badly, into the yard upon the snow, but kept the bag in the house; the patient played with the bag and unquestionably infected himself in this way. Pathological examination of the excised tissues showed anthrax bacilli, though in a slightly atypical form.

PURPURA TREATED WITH RABBIT SERUM.

BY RALPH C. LARRABEE, M.D.

THE patient, a boy of fourteen, is said to have had diphtheria on November, 1907, but as no physician was called, the diagnosis is doubtful. About Jan. 8, 1908, he began to have pain and swelling in the hands and knees, with a purplish eruption on the legs. There was also so much pain and tenderness in the abdomen that he was sent to the hospital as a case of appendicitis, on Jan. 16, but was soon transferred from the surgical to the medical wards. He continued to have repeated crops of purpuric spots of varying severity, associated with mild joint symptoms. There was a leucocytosis varying from 17,000 to 32,000. On March 4, the coagulation time with the Brodie Russell apparatus as modified by Dr. Pratt was eight minutes. (The normal is about five minutes.) For the next few days he received 30 gr. of calcium lactate daily without the slightest effect on the purpura. On the thirteenth, the coagulation time was thirteen and one-half minutes. On that date he received 15 ccm. of fresh rabbit serum, as used by Weil. This was prepared by Dr. Leary at Tufts College Medical School. It was followed by a slight rise of temperature and a decided amelioration of the rheumatic symptoms. For several days there were no new purpuric spots. Two days ago, however, he began to have what he now shows, a serum urticaria. The lesions are at first pale, as in ordinary urticaria, but they soon became hemorrhagic, as at present. Yesterday he began to receive calcium lactate again in 15 gr. doses, three times daily. To-day his urticaria is worse and there are more hemorrhagic spots than ever, in spite of a coagulation time of two minutes![1]

I. A CASE OF DECORTICATION OF LUNG FOR OLD EMPYEMA.

BY F. B. LUND, M.D.

CASE I. E. O., girl fourteen years of age, had pleurisy and pneumonia two years ago. One year ago, in April, 1907, she was operated on by Dr. Monks, a rib being resected in the posterior axillary line, for empyema. On March 23 she returned to the hospital, the sinus from the former operation never having healed. She presented an area of flatness reaching to the junction of the upper and middle thirds of the scapula behind, and bounded by a diagonal line from the junction of the fourth rib to the sternum in front to the tip of the shoulder. Under ether I operated and found an old cavity with hard, stiff walls, having its greatest diameter in the upper part of the chest. When pus was drained from it, it showed no tendency to collapse and an attempt was made to allow it to close by removing two-inch sections of the eighth, seventh, sixth and fifth ribs as well as the ninth which had been previously removed by Dr. Monks. The operation was well borne and at its conclusion the chest wall fell inward so as to partly obliterate the lower part of the cavity. The upper part behind the scapula was greatest in diameter. After this operation the girl at first did well and returned to her home in about two weeks. The sinus never healed, however, and in April she returned to the hospital again with evidence of accumulation of pus apparently extending forward across the front of the chest with some redness and edema of the skin. The chest was again opened through the lower incision and it was found that the lower part of the cavity had become obliterated by falling into the ribs and by expansion of lung. On extending the cut into the parietal pleura upward where the section of the ribs had formerly been removed, it was found that bone repair had taken place to a great extent, bridges of bone having been formed by the periosteum connecting the divided ends of the upper three ribs that had been removed. This bone was cut out and a large opening was made so that the interior of the chest could be inspected. The upper part of the cavity had remained apparently unchanged from the previous operation, and it was about four inches deep, extending clear to the upper part of the chest, and on the inner surface could be felt the very thick pleura holding down the lung beneath it. This pleura was torn through at the lower part when the finger was introduced beneath it. It felt like a piece of India rubber, one quarter of an inch thick and binding the lung down tightly. The finger was swept between this membrane and the lung, and then with long-handled angular scissors the membrane was slit along its whole length. As soon as this was done, it sprang apart and the lung fluffed up and filled the chest cavity. No drainage was placed at the upper part of the opening, but a tube was placed in the lower part of incision in order to drain the blood, which it was thought would run down from the freshly cleaned surface of the lung The rapid and complete expansion of the lung was remarkable. For three days there was no drainage from the tube, only a little blood, and it looked as if the lung would adhere to the chest wall, as it were by second intention, but a small quantity of blood clot which had collected in the lower part of the cavity broke down and there was a slight discharge. Now, May 18, the young girl is coming to the Out-Patient Department, nearly healed, and there is no evidence of dullness over the chest. The manner in which the lung fluffed up and filled the chest cavity in this case was truly astonishing to the operator, and has thoroughly established his belief in the efficacy of decortication of lung for the cure of old empyema cavities, instead of resection of the chest wall, which had been tried in this case and failed. The density and firmness of the membrane which bound down the lung was so great as to convince him that no other procedure would have brought about its expansion.

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[1] A day or so later he had a massive edema of the face, together with wheals the size of the palm scattered over the arms and legs. Some of the latter were hemorrhagic. This subsided promptly. Only a very few small hemorrhages appeared on the legs and there was no return of the rheumatism. He was discharged about March 30 practically well. The coagulation time remained about six minutes.

A CASE OF ARTERIOVENOUS ANASTOMOSIS FOR OBLITERATIVE ENDARTERITIS.

BY F. B. LUND, M.D.

L. C., thirty-two years of age, a Hebrew, was admitted to Dr. Monks' service at the Boston City Hospital the first of April. The story was that about nine months ago he had suffered from pain and a tingling sensation in left foot and the foot from time to time grew cold and white. During the winter, while employed out of doors as a roofer, he froze his toes. After that an ulcer developed on the great toe and two on dorsum and outer side of the foot. He had received treatment at the hands of many physicians, going from hospital to hospital without benefit. Examination showed nothing abnormal about the man except that the pulsation in the femoral artery on the left was distinctly less than on the right, and the artery seemed of small caliber. Pulsation could be felt in the popliteal artery, but not in the posterior tibial or dorsalis pedis. The foot presented a sluggish ulcer the size of a one-cent piece at the base of the great toe. There was a small ulcer on the dorsum of the foot and another outside at the base of the little toe. The foot was cold and white, and the heel purple. After two weeks' rest in bed no improvement took place. He was very anxious to save the foot, and encouraged by the apparent relief in one of Dr. Hubbard's cases of arteriovenous anastomosis for senile gangrene, I was induced to try arteriovenous anastomosis in this case, explaining to him, however, that the chance of success was small and that his stay in the hospital might be prolonged by the experiment. On April 23 the femoral artery and vein were exposed in the lower end of Scarpa's triangle, so as to go below the two valves which are here situated in the vein. The artery and vein were dissected out, one or two small branches of both being tied with fine catgut. The artery was clamped securely by Crile's clamp and divided between this clamp, a silk ligature applied below the point of division. The clamp was applied to the vein below and ligature above. Then the lower end of the artery was sutured to the upper end of the vein, end to end, by mattress sutures of fine silk so passed as to evert the wall of the artery, to increase its lumen and not allow any silk to present in the interior. About twelve sutures were required. Then the clamps were removed. There was bleeding from two openings between the stitches, which was immediately checked by the application of two more sutures. The vein immediately filled with blood and the foot turned from a white to a deep pink. The superficial veins in the foot filled out. Pulsation in the vein could be felt below the anastomosis but not as distinctly as in the artery above, probably because the wide vein provided so much space and because its walls were inelastic. The purple area on the heel disappeared and for a few days this condition continued, the circulation in the toe, however, being slow and the blood there stagnant. Although plenty of blood was apparently provided, the vein walls did not seem to be strong enough to force it out through the capillaries. The toe became gangrenous and the patient was advised to submit to amputation through the middle of the leg, but this he refused to do. Therefore, on May 4, the toe and first metatarsal were removed in the expectation that gangrene of the flaps would take place. This ensued, and on May 7 the leg was amputated by Farabeuf's method, about four inches below the knee-joint; healing by first intention.

The case presents many points of interest, one being that, as far as the writer knows, it is one of the first cases in which arteriovenous anastomosis has been attempted for obliterative endarteritis in the young. The operation has been several times performed at the City Hospital by Dr. Hubbard for senile gangrene in the presence of thick and atheromatous arteries. On the whole he had concluded, from watching his cases, that the progress of the gangrene was somewhat retarded, and it seemed to the writer that if anything could be accomplished in the thickened arteries of the old, in the obliterative endarteritis of the young, which is characterized merely by the presence of the fibrous tissue and not by calcification, a good result might possibly be obtained. High hopes were not entertained, however, for the reason that it was recognized that the thin and flaccid venous walls might not be able to propel the arterial blood through the capillaries and that the appropriation of the principal venous channel for the arterial supply might so cripple the venous return as to cause stagnation. Both these results occurred, so that the experiment may be considered to be useful from the negative rather than positive indications. The specimen which was sent to the pathologist was regarded as an ordinary case of gangrene from frost-bite and, therefore, was only superficially examined and thrown away. It is greatly to be regretted that we have no report on the specimen.

Dr. Lund also showed a young woman from whom a portion of the lower jaw extended from the symphysis to the angle and was removed five years ago for giant cell sarcoma. There was no recurrence, and the young woman was in excellent condition. The deformity was slight and the remainder of the jaw almost perfect. The case was reported in the Boston and Medical Surgical Journal for Dec. 3, 1903, and a photograph of the patient was given. The result of the case was satisfactory.

Dr. Lund also showed a case of carcinoma of the lower lip in which about two thirds of the lip required removal, and complete dissection of the right side of the neck was performed according to Crile's method. Removal of sterno-mastoid muscle; ligation and removal of internal jugular vein and glands on the right side of the neck. Several hypertrophic glands in the submaxillary triangle were reported to be free from carcinoma. It had been proposed subsequently to dissect the other side of the neck in the same manner, but owing to the negative report this was not done. The case illustrated the ease and safety of those extensive dissections, which are greatly facilitated in the removal of the internal jugular; and the entire absence of disability resulting from the removal of the sterno-mastoid muscle.

Dr. Lund also showed, for Dr. G. H. Monks, a woman who had been operated on for sarcoma of the chest wall necessitating the removal of the cartilages of two lower ribs on the left. The pleura was opened wide and considerable blood ran into it and had to be sponged out. The lung collapsed but its collapse did not seem to be attended by any severe shock to the patient or interference with either circulation or respiration. The pleural wound was carefully repaired and the gap left by the removal of the rib cartilages closed by suture of the muscles, and the patient when shown was in excellent condition. She died about three weeks later apparently from asthenia. At the time of the operation she was in very poor condition and presented evidences of internal metastasis.

I. TWO CASES OF AORTIC ANEURISM. II. "HEART BLOCK," STOKES-ADAMS SYNDROME. III. A CASE OF DYSARTHRIA, PROBABLY OF SYPHILITIC ORIGIN.

BY C. F. WITHINGTON, M.D.

Case 1. Of these two patients, one is living, the other dead. The former, now before you, is a brakeman, aged thirty-two years. He had a chancre ten years ago. He has been complaining for a few months, chiefly of dyspnea, and latterly of cough and hoarseness. The heart area is not much enlarged to percussion, but there is a well-defined circular area of dullness above the heart, rising above the sternal notch and extending well to the (patient's) left of the sternum. Its diameter is 3–4 inches and its periphery is defined by blue pencil upon the patient's skin, and corresponds closely with that shown in the excellent radiographic plate which I pass around.

There is a well-marked tracheal tug, and the voice is hoarse. Singularly the laryngologists report no paralysis of the vocal cord, but only a "subacute laryngitis." On auscultation, the respiratory murmur is greatly diminished in the left lung, and there are more râles on that side but without dullness.

We are safe in assuming that the aneurism presses on the left primary bronchus.

Of late the patient has complained of some difficulty in swallowing solids. An encroachment of the aneurism upon the esophagus is, therefore, probable. The pupils are equal and the finger recognizes no difference in the radial pulses. The systolic blood pressure in the two arms, however, is 90 mm. in the right and 98 in the left.

Aneurism of the arch makes itself known symptomatically only by evidences of *pressure*, and here we have, as we have seen, plenty of evidence of such pressure — the most serious being at present that upon the bronchus.

[The subsequent history of this patient was that within a few days his attacks of dyspnea became very intense and that one of them resulted fatally eight days after he was exhibited. There was no evidence that the aneurism ever ruptured, and death was apparently due to asphyxia. The obstruction of the esophagus never became complete.]

Case 2. In the second of our two cases, the pressure symptoms upon other viscera never took place and the aneurism, not a large one, was not recognized during life. This patient, a Swede, was thirty-nine years old and gave no history of syphilis. Three years ago he had an attack of rheumatism, and eight months ago began to complain of pain in the praecordia and dyspnea. The heart area was very greatly enlarged to percussion, the dullness extending 6½ cm. to the right and 14 cm. to the left of the median line. There was a systolic murmur at the apex, and a diastolic at the lower end of the sternum. No increase of dullness over the aorta was noted. This patient had rather an unusual amount of pain and appeared anxious and nervous about himself. Still, he seemed to be during fairly well, when one morning after eating a good breakfast, and seeming cheerful and comfortable, he suddenly died.

The organs which we have before us present, first, an enormous enlargement of the heart (*not* an ordinary accompaniment of aneurism).

There is insufficiency of both mitral and aortic valves, the peripheral attachment of the latter measuring 11 cm. as against a normal of 8, and the coronary vessels are almost wholly free of disease and perfectly patent. There is a great deal of disease of the aorta, however, and the ascending arch is somewhat dilated in a fusiform manner. On holding it to the light two areas are seen which are notably thin. This probably represents an aneurism, *in the making*. At the end of the descending arch there is a distinct saccular aneurism about two and one-half inches in diameter, proceeding from the posterior wall of the vessel and lying directly against the bodies of two of the dorsal vertebræ; to them the aneurism is so adherent that it was dissected off with great difficulty, exhibiting a very thin wall and leaving the bodies of the vertebræ denuded and showing considerable erosion of their substance. No signs of pressure upon any viscus exist, but the pressure on the vertebral bodies must have been great and undoubtedly explains the great pain of which he complained. An x-ray picture would have probably failed to show this aneurism, because it lay directly in the plane of the vertebral column. The slight dilatation of the ascending arch was too small to give a percussion dullness or probably a radiographic shadow.

The question arises as to the cause of this patient's sudden death. Evidently it was not due directly nor probably indirectly to the aneurism. The commonest causes of sudden death in heart disease are angina pectoris and asystole occurring in aortic regurgitation. The former can be ruled out on account of the normal condition of the coronary vessels. The latter was probably the cause of death.

II. HEART BLOCK.

The patient, a man of fifty years, is a teetotaller, without venereal history. He works indoors, but his work sometimes involves moderate lifting. He was perfectly well until last February, when he fell unconscious while at work. The attack was brief and he resumed work. The attacks, however, recurred several times daily. After a few days a rather severe attack led to his being taken to the Relief Station. Here he remained for almost a week. At one time the attacks became as numerous as thirty-six in twenty-four hours. They were quite apt to occur while he was in bed. The pulse then averaged about 30 per minute. He got better after a week or so, went out and resumed his occupation and had scarcely any attacks during the month of March.

Soon after the beginning of April, however, they began to recur, averaging five or six a day. He returned to the Relief Station and was sent to the main hospital.

Since being under observation here the attacks are less frequent, but he states that he has had several in the night. They are so brief that only one has been observed by a house officer. He says that his friends have noticed occasionally a slight twitching of portions of his body during the period of his unconsciousness.

He is rather a stout man with considerable color. The radial vessels are not very rigid. There is no dyspnea. Most of the time he appears pretty comfortable.

On the first observation, the heart beat three or four times at about one-second intervals, then pause of four seconds, one beat; pause of four seconds, one beat: pause of four seconds, two or three beats. The pulse in each minute averaged fairly constantly 28 to 32. The radial pulse always corresponds exactly with the first heart sound. The heart is very slightly enlarged and there is a systolic mitral murmur.

There is a visible jugular pulse which is generally three or four times as fast as the ventricular systole. Once three independent observers counted it simultaneously in the ratio of 3 : 1 to the apex beat.

Professor Cannon, of the Harvard Medical School, kindly brought over his apparatus and made synchronous tracings of the jugular and the radial pulse, which are here seen side by side. The ratio on that occasion was 4 : 1. About every fourth jugular pulse, corresponding to the radial pulse, shows a slightly increased wave, which Dr. Cannon suggests is due to a pulse transmitted from the carotid artery, intensifying that jugular impulse.

As we have no means of recording the left auricular contractions, we can only assume that these visible jugular pulsations are synchronous with the right auricular beats and that the left auricle follows the same rhythm. Then the "block" occurs in the transmission of the muscular impulse which is known normally to propagate itself from auricle to ventricle. Experimentation has shown that the application of a clamp in the auriculo-ventricular groove prevents this propagation, and that pathologically in a few observed cases (that of Stengel and others) a degeneration of the so-called auriculo-ventricular muscular bundle of His has been the apparent cause of such "heart block."

That is what we assume to be present in this case. Since being in the hospital, under the use of nitro-glycerin, the patient has been better and the pulse rate has sometimes for a minute or so risen as high as 60, but soon returns to its average of 30. The longest instance noted without any pulse has been ten seconds. In Stengel's fatal case, the intervals of cessation of pulse were much longer, even reaching the astonishing duration of two minutes and ten seconds! The syncopal attacks always occur when the pulse is slowest.

The possible diagnostic error of mistaking this condition for petit mal should be borne in mind. Edes, in his interesting paper on "Stokes-Adams Disease," suggests, as have Ogle and other writers, that the "epilepsy" which common report ascribes to Napoleon I, but which many French writers deny, is to be explained as a Stokes-Adams phenomenon — the usual pulse of that great warrior being about 40 per minute, according to Corvisart. The fact that life may be occasionally prolonged for years after the onset of those symptoms (three and one half years, Edes; and in one case, thirty years, Osler) lends some plausibility to this suggestion regarding Napoleon's "epilepsy."

III. ANARTHRIA.

The patient, a Norwegian, aged thirty-nine, is a sea-captain. He had syphilis about eight years ago. Two or three days before entrance he suddenly lost the power of speech or rather of articulation. On entrance there was absolutely no loss of power or sensation to be detected. The reflexes were normal and the mind apparently clear. There was no true aphasia either motor or sensory. He understood perfectly what was said, and did what he was told.

He talked very freely, but his words were at first almost unintelligible because of his difficulty in enunciating his consonants. He never hesitated in choosing his words and never used the wrong word. He was perfectly aware of his difficulty in articulation, and apologized for it. At first, the handwriting was not legible, but soon became perfectly so, even before the speech had become very clear.

As he talks now in answer to questions, you will see that he is voluble, but while one can understand most that he says, the labial and lingual consonants are badly enunciated. But there is no paralysis of the twelfth pair nor of any other cranial nerves. Deglutition is perfect.

Dr. Knapp, who has kindly seen him in consultation, considers it a lesion, possibly syphilitic, of the posterior part of the fissure of Sylvius.

He was at once put upon iodide of potash and the improvement has been very marked from day to day. [This continued after the patient was exhibited, and within a week he was discharged from the hospital talking pretty clearly.]

I. TIC DOULOUREUX: INTRANASAL TREATMENT. RECOVERY. II. RADIAL MASTOID OPERATION WITH POSTERIOR PERIOSTEAL FLAP.

BY GEO. A. LELAND, M.D.

Case I. The case of this lady, seventy-five years of age, is one of tic douloureux treated by the intranasal method. She has been suffering from extreme pain referred to the outer part of the left upper lip for ten years.

She came into the hospital in the fall of 1906. There was considerable muco-purulent discharge from the left nostril which was evidently from ethmoid disease primarily. The antrum was also involved, probably acting at first as a reservoir for the pus coming down from above. She was operated on by the Killian method, entrance being made first at the root of the nose after an incision from the outer limit of the eyebrow in the middle over to the nose and down upon the nose about half way. After an entrance was made into the anterior ethmoid cells no opening was found upward into the frontal sinus, so it was, therefore, concluded that it was absent. The anterior ethmoid cells were well cleaned out backward and the wound closed. The wound has healed, as you see, without a scar.

For a time there was much diminution of pain, but after a month or two it seemed to return and then an operation was done by the Jansen method through the canine fossa and the antrum was cleared out, being found full of large polypoid granulations. An opening was then made into the nose through the second meatus, that is, over the lower turbinal, that important structure being preserved after the method of Gerber, of Königsberg. This healed up kindly and she went away from the hospital without pain, but in the fall of 1907 the pain again appeared and it was evident that some of the posterior ethmoid cells with the sphenoid might be the cause of it, so she was returned to the hospital about the first of the current year, and at the Out-Patient Department the cells were opened and the face of the sphenoid was removed and the inside treated. She is now free from pain and the mucous membranes in the upper part of the nose are nearly clean and of a normal apearance.

Case II. This second case I merely show as an example of the radical mastoid operation with a large periosteal flap used to shut off the posterior cavity from the middle ear. The man, about thirty-five years of age, has had a discharging ear on the right for many years. It occasionally lighted up and caused him headache which was relieved by discharge. Sometimes malaise was marked and sometimes not. In order to insure him from future attacks he submitted to the radical peration.

The large cavity resulting from this operation requires usually a good deal of care during the patient's life, and in a few instances in my experience the bony shell is so thin that even very gentle syringing (or if the water is too hot or too cold) may make vertigo quite a troublesome symptom. It seems desirable, if possible, to diminish the size of this cavity, so as to have less area for future toilet and to have the interior of the cavity better protected. So after making the usual curvilinear incision through the skin, I dissected it back and took from beneath it posteriorly a large periosteal flap. After the completion of the operation, the posterior edge of this flap is placed down upon the facial ridge and packed there rather firmly by gauze anteriorly in the middle ear and posteriorly in the wound. After four or five days this posterior packing is removed with care so as not to disturb the edge of the flap, and renewed. Anteriorly, the packing is removed on the next day, that is, on the fifth or sixth day, and the flap is found usually to have become firmly united to the bone. After a few days the latter cavity is dermatized and with light packing, the posterior wound fills in much more rapidly and is much less troublesome than by the old method of dressing. If you will examine the conditions now, it will be seen that the canal is about the same size as a normal canal, but at the fundus there is no appearance of the drumhead, ossicles, etc., and the posterior cavity is nearly filled up, only about ten days after the operation.

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Medical Progress.

PROGRESS IN PHARMACOLOGY.

BY MAURICE VEJUX TYRODE, M.D.,
Instructor of Pharmacology, Harvard Medical School.

Activity in the field of pharmacology and therapeutics is constantly increasing with the establishment of new laboratories and creation of new positions. This is not only from scientific interest but on account of the real practical nature of the subject. In the higher medical communities it has become an established fact that good results in therapeutics from drugs are only to be obtained when we understand their action on the different parts of the living organism. As a marksman would hardly expect to strike the target with his eyes closed, so a physician cannot hope, except by the merest accident, to obtain good results with his drugs when he is blind as to their action.

Although the other methods of therapeutics, i. e., dietetic, physical and psychical, have lately also been subjected to a great deal of scientific study, and their field of application has been much broadened, yet the rational and proper use of drugs has not diminished in importance. Quacks and unbalanced enthusiasts are trying to deprive therapeutics of some of its tools by claiming to treat and cure most diseases only by one agent, as, for instance, psychotherapeutics; or by physical therapeutics, such as physical culture, exercises and massage; or by dietetic changes including some faddish system of diet for all ailments, or by some special medicinal preparations. The best results, however, will be obtained by the sober-minded and well-trained physician, who considers critically and scientifically all classes of therapeutic agents at his command, including dietetic, physical, psychical and medicinal.

The following short paragraphs give a few words concerning recent work on old and new drugs. The first few treat of the narcotics, including anesthetics and hypnotics.

Ethyl choride. — In studying the action of the anesthetics much interest arose as to whether they were mechanically dissolved in the blood or whether they formed a combination with some element of the same, just as do oxygen and carbon monoxide. It was shown by Meyers that the red blood corpuscles contained a larger percentage of chloroform than the plasma. Now Camus and Nicloux,[1] after a careful research on ethyl chloride, have shown that the red blood globules, during anesthesia, contained three times more ethyl chloride than the plasma, but that when consciousness was returning, the proportion became reversed. They also showed that blood in vitro from an anesthetized animal retained tenaciously its ethyl chloride, but that on exposure to oxygen the former was displaced. This would tend to show that ethyl chloride forms some compound with the red blood corpuscles which is broken up by the mass action of oxygen.

Choral. — Mansfeld [2] has just found that when this drug is administered by the stomach, the quantity found in the brain is much larger than that present in other organs and that this proportion is greater with choral than with alcohol. This, he explains, by the fact that the former is a much stronger narcotic than alcohol and believes that his experiments support the Meyer-Overton theory that narcosis is due to the physical solubility and attraction of the lecithin elements of nervous tissue by the narcotics of the fatty acid group.

This theory is also supported by Werking,[3] who found that anesthesia can be shortened or even set aside by the injection of lecithin in an anesthetized animal.

Isopral and *bromural.* — When newer synthetic compounds are formed, especially of the choral or antipyretic groups, the manufacturing firm and some clinical observers report marvelous results with no undesirable effects, and claim that the new product is in every way superior to the original type of the group. This has been the case with isopral and bromural, but a careful comparative study by Torald Sollman [4] shows us their true position. He says: "If the dose of choral required to produce a given effect is taken at 100, that of isopral would be about 60 (as stated by Hatcher) and that of bromural about 100. The bromural narcosis is, however, less profound. These ratios hold for all doses, small and large. The toxic quotient of the three drugs is about the same. The contrary conclusion of Impens is based on highly exceptional results. In practice, however, choral is only half as dangerous as is isopral, since excessive doses are generally expelled by vomiting and since the subseqeunt very dangerous cachexia is less pronounced. On the other hand, relatively small doses of chloral do at times cause sudden death, namely, when there is great excitement. The statement of the promoters that isopral is 'the safe hypnotic of the chloral group,' is, therefore, as previously stated, almost criminally misleading. Large doses of bromural are nearly equally as dangerous as corresponding doses of chloral, so that it cannot be called 'absolutely harmless.' Since it is only advised, however, for the mildest cases, the temptation to give larger doses would be absent."

Bromural is said by Runck [5] to have the power of checking the secretion of sweat in small doses insufficient to cause narcosis. If this is so, it would be very valuable for this purpose, as the number of our anti-hydrotics is limited, but his observations are purely clinical and not at all conclusive.

Veronal is another drug which was introduced as a substitute for chloral, on the ground that it produced more intense action with less danger. Since that time numerous cases of veronal poisoning have been reported, and Steinitz [6] presents a very interesting article on intoxication from this drug. In his analysis he describes the chief symptoms as sleepiness, drunken walk, difficult speech, tremors, double sight, slow pupillary reaction, increased tendon reflex, delirium and sometimes a rise of temperature in cases with raised mental activity. In a few cases of chronic poisoning there occurred vasomotor disturbances, exanthemata, vomiting, diarrhea and diminished urination.

The same author experimented with the sodium salt of veronal, which is freely soluble in water, and which he believes possesses considerable advantage over veronal itself. He says that it should not be given while the stomach contains free hydrochloric acid, as it then becomes resolved into its constituent parts. Thus the only practical method of administration would be by rectum, as he believes that its effect is not so favorable after subcutaneous injection.

Alcohol. — Various opinions have been expressed concerning the chronic action of alcohol in producing cirrhosis of the liver by its irritant action while passing through the portal system, but Baumgarten [7] has performed a series of experiments upon rabbits to determine whether such changes could be produced artificially. He obtained necrosis of the skin after the injection of 90% alcohol; only after repeated injections did he observe it with 50–70%, and with weaker than 50% alcohol he was unable to obtain either local necrosis or inflammation; after the chronic administration of alcohol to rabbits he never saw the changes in the liver characteristic of cirrhosis.

The question, however, is far from being answered, for the influence of alcohol on man over a period of many years might have a very different influence than upon the rabbit, an herbivorous animal, given over a period of months. Baumgarten admits that it may be a predisposing factor, and that can be easily understood. By its toxic effect upon the protoplasm of the liver, it may lower its vitality and predispose the latter to the degenerative changes characteristic of cirrhosis, which might be caused by other toxic products such as bacterial toxins.

Morphine. — Although when given in medicinal doses morphine has no action upon the heart, and even in fatal poisoning death is due to paralysis of the respiratory center, yet the work of Vinci [8] on the action of this drug and of its derivatives on the isolated heart is quite interesting. He finds that they all depress this organ, diminishing both the rate and strength with arrest in systole. Before the depression he observes in very small doses an augmentation of the amplitude, best seen with morphine, less with heroin, hardly with codeine and dionin and absent with peronin. After the arrest of the heart he could make it beat again with normal salt solution and other stimulants when the poison was morphine, dionin, heroin and codeine, but with great difficulty after peronin.

Dionin was recently recommended by Stiel for the treatment of ozena. He claims that it causes a profuse watery secretion in the nose, which washes away the dried mucous and crusts. It is to be given as an insufflation of the pure powder, or of the same diluted with antiseptics as aristol, europhen and boric acid, or it may be painted in 5%–10% solution. The reviewer would suggest that the nasal mucous membrane, being very vascular, might absorb poisonous quantities of this drug, and that great caution should be exercised in using it for this purpose.

Scopolamin-morphine narcosis. — After having observed 1,500 cases, Holz [9] comes to the conclusion that pure scopolamin-morphine narcosis is to be avoided on account of danger from toxic action; second, that in combination with ether or chloroform, he obtained greater tolerance, absence of excitement and no post-operative vomiting or pneumonia. His method is to give the night before the operation, $\frac{1}{2}$–1 gr. veronal; one hour before operation, 0.0006 gr. (0.0004 gr. in women) scopolamin, and 0.01 gr. (0.005 gr. in women) morphine. Only a little ether or chloroform is required afterwards. Holz is right in abandoning pure scopolamin-morphine narcosis because it is always dangerous to produce complete unconsciousness with non-volatile drugs, as under those circumstances we cannot control the excretion and the depth of the action as with volatile substances such as ether.

Intraspinal anesthesia. — Lindenstein [10] operated 500 cases by this method of anesthesia, using in 42 stovain, in 48 tropacocaine, in 2 novocain, and in the balance cocaine, in 5% solutions. The untoward effects which he observed were vomiting, headache, general malaise and in 3 cases abducens paralysis. The poisonous symptoms were observed especially in women to the extent of 75%. He recommends that we should guard against this method in hysteria, neurasthenia and anemia, and that it should only be used in abdominal operations when there is a strong contra-indication for inhalation narcosis.

Stovain was studied by Coderque Navarro, who comes to the conclusion that stovain is superior to cocaine because of lower toxicity, less vasoconstrictor action and an equivalent anesthetic effect, yet cheaper in price.

Nicotine. — Dowling investigated amblyopias in tobacco users. He found that it chiefly affected males between thirty-five and sixty-five, but that negroes enjoyed considerable immunity. The symptoms consist in a progressive loss of visual acuteness. Patients complain that luminous objects dazzle them, that they see a glimmering mist and that their vision is better in the evening than in bright daylight. There is a persistent contraction of the pupils. The ophthalmoscope shows at first redness of the optic papilla, later anemia and finally atrophy. The prognosis is good if the patient comes early. The treatment consists in prohibition of tobacco and the use of strychnine.

Hordenine is an alkaloid extracted from barley and first came to scientific notice on account of its supposedly great antiseptic action in culture media, when it was recommended for the treatment of cholera, dysentery and typhoid, but it has now been carefully studied by Camus.[11] He found that its toxic properties are not very great, as it takes 0.3 gr. per kilo to cause the death of an animal, which is due to paralysis of respiration. In smaller doses it causes hallucinations and some motor paralysis and just before death choreiform and tetanic convulsions. Its action on the heart and circulation is slight. In small doses it increases and in large ones decreases the secretion of the kidneys. Its antiseptic powers are only seen in the strength of 5%.

Yohimbin. — Mueller studied in detail the action of this drug and describes it as follows: With small doses, congestion of the genitals and erection of the penis due to dilatation of the penal arteries and to increase in the irritability of the reflex automatic sexual center in the sacral cord; in large doses it causes salivation, quickening of respiration, muscular twitchings, congestions of the eye and watery defecation. With large toxic doses there results convulsions, paralysis and general collapse preceded by increase in the reflexes, but no erection nor congestion of the genitals. The respiratory center is stimulated even by very small doses but paralyzed by large toxic ones. The heart is not affected, but fall of blood pressure is due to vasomotor paralysis (direct action on vessel walls), especially of the vessels of the skin, kidneys and intestines.

Ylang-Ylang Oil. — Kettenhofen [12] made a pharmacological study of this substance. He found it to be an antiseptic and to stop the movements of the leucocytes in inflammatory processes just as does quinine. Its action on warm-blooded animals is much weaker than on the cold-blooded. It causes death by general paralysis and especially that of the respiratory and vasomotor centers. As it diminishes the spinal reflexes in warm-blooded animals it might be employed to check convulsions in man and because of its protoplasmic poisonous action it might serve as a remedy for malaria.

Petroleum. — Petri describes the case of a chauffeur who, after inhaling the fumes of gasoline, became unconscious for some time and on awaking experienced intense headache and general malaise, from which he recovered in about twenty-four hours.

Quinine. — Lenzman and Knapp revived the treatment of syphilis with quinine. Lenzman injects ½ gr. quinine hydrochlorate and repeats this dose the next day, then injects 0.6 gr. and repeats the latter injection four times at four-days interval. By the ninth intravenous injection, all symptoms have vanished in his cases. He used about 5 gm. quinine hydrochlorate in the course of from fourteen to twenty days, and he believes that this treatment may prove useful in the cases in which mercury fails or is not well tolerated.

Lancereaux used with good results quinine in exophthalmic goiter. He explains his results by the assumption that the disturbance in the disease is due to vasodilatation of the vessels in the gland and, therefore, excessive secretion. Quinine, he believes, on account of a vasoconstricting action on the vessels of the head and neck, is ideally adapted to cure the vasodilatation of exophthalmic goiter.

Quinine cacodylate has just been studied by Castellain [13] who found that it had marked curative powers in trypanosomiasis or the sleeping sickness, both in the spontaneous form in man and also in that experimentally produced in monkeys. He also obtained good results in malaria, kala-azar and frambesia. The method of administration was intravenous.

Theophorin is a new diuretic of the caffeine group consisting of a double salt of theobromine and sodium formate. Cohn [14] experimented with this substance in cardiac dropsy and obtained good diuresis. He found that it lowered somewhat the blood tension but increased the pulse rate. He does not recommend its use in nephritis.

Urotropine and its derivatives. — Forkart [15] experimented with urotropine, helmitol, new-urotopine (compound of urotropine with methylene-citronic acid), hetralin (dioxybenzolurotropine), hippol (a compound of formaldehyde and hippuric acid), borovertin (a compound of boric acid and urotropine). All these yield formaldehyde in the urine. In his tests with the bacillus typhosus, the proteus, streptococcus and staphylococcus, the most active of these urinary disinfectants were urotropin, hetralin and borovertin.

The compounds yielding formaldehyde in the urine are decidedly among the most efficient antiseptics, for Sollman found that the salicylates, salol and novaspirin, have much inferior preservative effects than hexamethylenamin or urotropine and that boric acid, citrarin, formidin, iodomuth, sodium benzoate, sodium phenol sulphate, tannoform, tannopin and urosol are practically useless.

Tannyl is a new intestinal astringent described by Umber [16]; it is a compound of tannin with oxychlorcasein and is less soluble in gastric juice than tannalbin; further, it possesses antiseptic properties because of the oxychlorcasein. Another advantage is that it becomes only slowly decomposed in its passage through the intestine, and, therefore, exerts an influence on the entire tract.

Adrenalin. — Schirokogorow[17] made further studies on the production of arteriosclerosis by adrenalin in rabbits. He found the beginning of the changes after two days, and well-established necrosis of the muscular element in the vessel walls after six days, and true sclerosis with deposits of calcium salts after eight days. The vessel changes were exactly the same as those observed in human arteriosclerosis. There were also foci of necrosis and connective tissue formations in other organs; the most important were cirrhotic degeneration of the liver, hypertrophy of the heart with muscular degeneration and also cysts in the brain due to endarteritis.

Lichtwitz[18] was able to show by a special preparation of a frog that adrenalin traveled from the lower extremities to the upper when these were only connected by nerves.

Meissl experimented with intravenous adrenalin-salin infusion in severe collapse from the acute anemia of puerperal hemorrhage and reports the most satisfactory results. These can easily be understood on account of the transient blood-raising power of adrenalin, but the most absurd recommendation for such purposes is to administer the same by mouth as other authors have previously recommended. Under such circumstances the drug in question can have no effect whatever because it is decomposed during its absorption.

Kidney extract. — Experimental work was performed by Formanek[19] on chronic Bright's disease and from his observations he comes to the conclusion that renal extracts exert a beneficial effect, increasing the total quantity of urine and also the specific gravity, but diminishing markedly the quantity of albumin and the toxic symptoms.

Hook-worm. — Preti[20] recognized a substance which he calls ankylostomahemolysin in the bodies of the hook-worm, or ankylostomaduodenale. This substance is soluble in alcohol and ether and destroys the blood corpuscles of men, dogs, rabbits, oxen and guinea-pigs. It is so powerful that 2½ mgm. of fresh ankylostoma is enough to dissolve 1 ccm. of fresh blood corpuscle suspension. The presence of this substance undoubtedly explains the severe anemia characteristic of this disease in man.

Non-bacterial aggressins. — It is now a well-known fact that certain bacterial products may produce certain bodies in living organisms which intensify their action in subsequent administration. Horse serum has been shown to increase the susceptibility of guniea pigs so that a dose many times smaller than the first given produces very toxic symptoms and death. Tedeschi, by special methods, has shown that such aggressins may be formed after the use of abrine, morphine, nicotine and cocaine.

Diphtheria toxin. — Rosenau and Anderson have made some interesting observations upon the action of diphtheria toxin; they found that it produces, in about 66% of guinea pigs, round peptic ulcers in the stomach, but that the intestines are not so affected. It would seem, therefore, that this action must be more or less specific upon the stomach and this leads to the thought that other toxins may at times be factors in the production of peptic ulcers in man.

Hydrogen sulphide. — Sabbatani experimented to find an antidote for mercury and as a result of his experiments he concludes that the best one is hydrogen sulphide when administered intravenously. The action, however, is not perfect, because the sulphide becomes slowly oxidized to the sulphate of mercury in the circulation.

Neutral salts. — Pons[23] has studied their action on gastric digestion and he concludes that they are all inhibitive with the exception of sodium sulphate, magnesium sulphate and sodium formate.

Martinet,[22] on the other hand, finds that sodium chloride or common salt generally favors gastric secretion in man.

Joslin and Goodall[21] after a painstaking research were unable to confirm Taylor's assertion that salt-free diet produces acetone and diacetic acid in normal individuals.

Lowenstein found that salt-free diet produced a lowering of the blood pressure, and Bayer observed a marked increase in the blood pressure of arteriosclerotic patients when they were changed from a salt-free diet to one containing salt.

Tucker used a concentrated solution of magnesium sulphate for the treatment of erysipelas with excellent results. He noted freedom from pain in a few hours and complete recovery in from two to seven days.

Potassium chlorate. — Winogradow[24] contributed an interesting research on the action of this drug. He found that dogs poisoned by intravenous injection showed fat emboli in different organs, especially the lungs. Seeking for the source of this fat, he discovered marked changes in the bone-marrow, it being transformed from its normal yellow color to a red on account of the loss of its fat. The latter appears first in the lungs, then subsequently in the liver, kidneys and heart, and may even be found in the urine.

Silicic acid. — Zickgraf,[25] acting upon the researches of Schultz, who found that this acid was of considerable importance in the general metabolism, and especially for the formation of connective tissue, made a study on the use of mineral waters containing silicic acid in the treatment of pulmonary tuberculosis and believes that he has made favorable observations.

Sodium saccharate. — Schucking[26] observed a marked blood pressure raising influence from this drug and also a considerable tonic effect on the intestinal musculature. He recommends it in cases of collapse and atony of the intestines after operation and advises that it be given in $\frac{3}{10}\%$ of normal salt solution if the case is not very urgent, otherwise it may be injected intravenously or subcutaneously.

Sodium glutate. — Baer[27] studied acidosis in diabetes from phloridzin in dogs and found that sodium bicarbonate did not have as much benefit cial action as sodium glutate. He also obtained favorable results with the latter in human beings.

Potassium iodide. — Determann[28] tried to clear up the question of the influence of the iodides on the viscocity of the blood, as it has been suggested that it was by lowering this factor that this class of drugs caused the beneficial influence on arteriosclerosis. His experiments were negative for he could not prove a lowering of the blood viscocity after the administration of iodides and, in conclusion, believes that their good effect cannot be explained in this manner.

Von Pflugk was able to show a decided influence on experimental cataracts produced in dogs by naphtalen after the administration of potassium iodide. These cleared up completely in the insipient stage.

Lead. — Dauwe, in studying experimentally lead poisoning, found that the acetate of lead rapidly disappears from the blood after intravenous injection. He searched for antidotes and found sodium sulphate the most effective. In frogs, he was able to neutralize from two to six times the fatal dose with Glauber's salt. In rabbits, this substance was not so effective an antidote, but he was able to cure these animals by rapid alternate bleedings and transfusions.

Noble metals. — Bachem[29] came to the conclusion that thor and zirkon do not produce well-marked action in animals. Their effect depends partly on the acid constitution and partly on the salt as a whole. The sulphate of lenthan produces a well-marked stimulation of the respiratory center. The oxalate of cerium is excreted principally by the feces, for the urine never contains but traces. All these metals have antiputrefactive properties.

Arsenic. — The organic preparation, sodium cacodylate, was made the topic of careful study by Biehler.[30] She found that in normal animals and in human beings it increased the specific gravity of the blood and the percentage of hemoglobin but it diminished the number of globules, both red and white. It augmented the body weight and produced an improvement of the general condition, but decreased the power of oxidation of the organism. She believes that it is indicated in cases of malnutrition, or where there is diminution of albumin and hemoglobin in the blood.

Atoxyl, or anilarsinate of soda, has received a large share of the attention of the medical literature. It is warmly recommended in the treatment of syphilis by Salmon,[31] Hallopau and Curschmann. Shirmer feels sure that it cures experimental syphilis in animals, and Uhlenhuth has observed a better protective action against syphilis in rabbits with atoxyl than with corrosive sublimate. On the other hand, Spiehoft,[32] while using it in syphilis, observed poisonous symptoms in 11 out of 23 cases, consisting of fever, albuminuria, vomiting, diarrhea, bloody emesis, jaundice and parasthesias. He thinks that atoxyl is only indicated when patients are refractory to mercury in malignant syphilis and when mercury causes loss of weight and much general disturbance.

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Reports of Societies.

AMERICAN PUBLIC HEALTH ASSOCIATION.

Thirty-Sixth Annual Meeting, held at Winnipeg, Manitoba, Aug. 25, 26, 27 and 28, 1908.

The President, Dr. Richard H. Lewis, Raleigh, N. C., in the chair.

REPORT OF COMMITTEE ON OPHTHALMIA NEONATORUM.

Dr. F. Park Lewis, Buffalo, N. Y., chairman, presented a lengthy report on this subject, in which it was stated that ophthalmia neonatorum is still a most prominent cause of much unnecessary blindness. The efforts that have been made have already lessened its disastrous results in a large degree, but in many instances where it seems to be infrequent it will be found to be producing blindness among the poorest and most neglected classes. In these the burden on the public treasury is greater because the victims of this neglect become almost inevitably charges upon the state. The responsibility for the investigation, the recognition and the control of this infection rests upon the Department of Public Health. The committee recommends that the conclusions reached by the Committee on Ophthalmia Neonatorum of the American Medical Association be approved by the American Public Health Association, and that whenever practicable, the health officer of the state or territory over which he exercises jurisdiction be urged to confer with the committee appointed by the American Medical Association and to inaugurate such measures through the state and its counties for the enlightenment of the people and the control of this disease as may in their judgment seem advisable.

The recommendations of the Comittee on Ophthalmia Neonatorum of the American Medical Association are (1) to secure the enactment of laws in each state or federal territory requiring the registry of births and placing the supervisory control and licensure of midwives in the boards of health, requiring that all midwives be examined and registered in each country, and that they be required immediately to report each case of ophthalmia occurring under their ministrations under penalty for neglect, if found guilty, of fine, and for a subsequent offense, forfeiture of license. (2) The distribution by health boards, through bulletins and otherwise, of circulars of advice to midwives and mothers, giving instructions as to the dangers, methods of infection and prophylaxis of ophthalmia neonatorum. (3) The preparation and distribution by the health boards of ampules or other receptacles containing the chosen prophylactic, with specific directions for its use. It is advised that the choice of the prophylactic be determined by the health officer with the advice of the committee representing the obstetricians and ophthalmologists for that state from the American Medical Association. (4) To insist on the maintenance of proper records in all maternity institutions and other hospitals in which children are born, of the number of cases of ophthalmia neonatorum, with the method of treatment and the results. These reports, which should include all cases of scarred cornea as well as of blindness, should be filed at regular intervals with the Department of Public Health and the records published. (5) Periodical report to boards of health by all physicians engaged in obstetrics of the number of cases of ophthalmia neonatorum that has occurred in their practice within a specified time, whether or not a prophylactic was used, and if so, what, together with the result.

DISCUSSION.

Dr. **Gardner T. Swarts**, Providence, R. I., said that inasmuch as ophthalmia neonatorum is a communicable disease, the proper health authorities and health associations should take cognizance of that fact and endeavor to combat the disease as they do other communicable affections. In Rhode Island there is a law requiring that if inflammation of the eye or eyes occurs in a child the first five days after birth, a physician or health authority shall be sent for to take charge of the case. It is the duty of health officers, if they find that this disease is prevalent, to notify physicians of that fact, and particularly the younger practitioners. As the disease is a preventable one, such prophylactic measures as suggested by Dr. Lewis should be carried out.

Dr. **F. F. Wesbrook**, of Minneapolis, said it should be a comparatively easy matter to convince the provincial or state authorities that what money is expended in providing for printing, postage, nitrate of silver, argyrol or some other drug is more than saved in the cost of providing for the education, housing and maintenance of blind people. He feels quite sure that in Minnesota they would save in the State Hospital for the Blind more than it would cost to carry out the recommendations of this committee.

Dr. **Charles F. Fagan**, Victoria, B. C., said that for a number of years he has devoted his entire attention to health matters and was ashamed to say that he had entirely neglected his duty on this question. In the future he would endeavor to keep this subject before medical and health authorities, so that they would take action. He would certainly take up this question iu his own district.

Dr. **William Henry Guilfoy**, New York City, said that steps have been taken by the New York City Department of Health in prosecuting successfully some of the midwives who have been accused of not reporting cases of sore eyes among very young infants. They have found it necessary to go further, and at the last session of the Legislature a bill was passed which gives the New York City Department of Health complete power over registration and the practice of midwifery, and in consequence certain rules have been formulated, a violation of which is a misdemeanor and punishable by fine and imprisonment. Very soon they hope to see the way clear to have about 1,500 midwives under constant supervision.

Dr. **John N. Hurty**, Indianapolis, Ind., said all those who are engaged in public health work should fully appreciate the importance of this report and its recommendations. While progress has been made in this regard, still it will be a long time before the legal authorities take hold of this matter in the right way, and it will be a long time before the people will become interested in that which concerns them so deeply. It is strange that the people themselves are so indifferent in regard to such an important matter as the prevention of blindness. Dr. Hurty moved that the secretary publish at the earliest date possible the report of the Committee on Ophthalmia Neonatorum in the *Journal of the American Medical Association*, or other medical journal, and that he shall have 2,000 reprints made and distribute the same according to his judgment, subject to the approval of the Publication Committee.

This motion was seconded and carrieid.

VACCINATING WITH HUMANIZED LYMPH.

Dr. **Francisco de P. Bernaldez**, of Mexico, described the methods adopted by the Vaccination Department of the Supreme Board of Health of Mexico, with the most satisfactory results. The region in which the vaccine is to be inserted, whether on the arm or on the leg, is carefully washed with sterilized water, soap and a brush, rubbing with the latter until the skin becomes red, and is then dried with sterilized cotton. The inoculation is then practiced with lancets that have previously been dipped in boiling water or passed through the flame of an alcohol lamp. The pustules of the child from whom the vaccine is drawn are cleansed exclusively with sterilized water and cotton, are very superficially scarified and not used if they bleed. A small quantity is taken up on the lancet and the inoculation made in the person who is to be vaccinated by means of small punctures, almost joining each other, and six to eight in number. In making these punctures the lancet leaves the lymph spread over the place where the punctures have been made. These should not reach beyond the dermic layer of the skin, because that is where the lymphatic net work is found abundant and fine. Moreover, this is the way to prevent the vaccine pustules from bleeding. The object in making the punctures in the form above described is to produce pustules in a series, so that the collection of the lymph will be facilitated, because there will be only one scar and not several. The pustules may be numerous, and, lastly, the vaccination is not painful.

The advantages of this method over others that have been described are that they do not cause any pain, do not give rise to any flow of blood, they facilitate the collection of the lymph and they can easily be examined to find whether they present the characteristics of true vaccination, because this is the only way in which the operating physician can ascertain with certainty whether a person has been well or badly vaccinated. If other methods are employed, or the skin is scratched, the pustules cannot present those characteristics, and the operator always remains in doubt as to whether the individual has obtained immunity or not.

PREVENTION OF SMALLPOX.

Dr. **James Roberts**, Hamilton, Ontario, described an outbreak of this disease which comprised some eighty cases, the handling of which cost the municipality of Hamilton approximately $10,000. The one feature which appears to him more striking than any other in this outbreak is the precision with which the disease singled out in family after family the unprotected for attack. He was unable to find after careful scrutiny of the personal history of each case previous to this illness any evidence to prove that in more than one or two instances vaccination had ever been performed. Practically the whole series of cases was without the semblance of a scar. More thorough investigation and closer inquiry into the causes of disease furnish more convincing evidence in favor of contact infection as the chief factor in the spread of this as well as the other exanthemata, notwithstanding all that has been said and written on the doctrine of aërial transmission.

The author believes that if the enforcement of the vaccination act is intrusted by law to the sanitary authorities alone, with the necessary legislation to protect them adequately in the discharge of their duty, the great bulk of the people of Canada would be found as willing to have the law carried out as are the people of Germany. Upon the practicing physicians devolves the great and serious responsibility of seeing that the performance of vaccination for contract prices among school children and among the industrial population in large cities is carried out in such a scrupulous and conscientious manner as in no wise to bring discredit or reproach upon the twenty years of quiet and painstaking investigation which gave to the world the greatest discovery known for the preservation of the human species.

DISCUSSION.

Dr. W. F. Elgin, Glenolden, Penn., referred to the effect of heat on vaccine. Taking virus from the same animal and subjecting it to various temperatures and noting the results the speaker finds that a temperature exposure of 60° C. killed the vaccine matter in five minutes. Where the vaccine is kept at the temperature of the body and is carried by physicians in their pockets for three days, it has but little or no effect. At a temperature of 25° C., or ordinary room temperature, vaccine will last a week; at a temperature of 15° C., it will last from three to six months, and if kept below the freezing point, minus 10 to 15°, he has been able to keep it for four years and it was good at the end of that time. But he has never kept vaccine longer than that.

Dr. F. M. Smersh, Owatonna, Minn., said that in order to have a successful vaccination, the arm, the towel and the vaccine must be aseptic. He finds in a great many instances that people who have been vaccinated infect themselves through carelessness. In many cases they put a dirty rag around the sore. He cited such instances where infection had occurred.

Dr. Alton S. Fell, Trenton, N. J., referred to the methods of quarantine in cases of smallpox. Prior to seven years ago the speaker had not seen a case of smallpox. In December, 1901, the disease broke out in the city of Trenton, and the President of the Board of Health, who had had some experience with smallpox, insisted that no matter what the stage of the disease was, every one should be taken to the Isolation Hospital and isolated for a period of eighteen days. This worked a good deal of harm and later such rigid isolation measures were not enforced, but the results were equally as good.

Dr. William A. Evans, Chicago, said there is a growth of anti-vaccination sentiment in this country which he believes philosophically is founded on the prevailing principles of American law. In addition it is founded upon a growing diminution in the virulence of the disease, due largely to the fact that men protected are modifying the causative agency of smallpox just as the causative agency of smallpox in turn modifies man. He believes that this decreasing virulency of the disease is a factor in the development of an anti-vaccination sentiment which proves ill for this country. Some organization should prepare a refutation of the arguments advanced by anti-vaccinationists, and this refutation should be given the official endorsement of the organization responsible for its preparation. He knows of no organization that is better prepared to do this work than the American Public Health Association.

Accordingly, he moved that a committee be appointed to prepare an argument as to the efficacy of vaccination, and that the Association devise some means for the dissemination of that report and that some effort be made toward a simultaneous and concerted movement throughout the country in opposition to the anti-vaccination sentiment.

This motion was carried and a committee of seven is to be appointed by the President.

Dr. L. Laberge, Montreal, said that in 1885 they had a serious epidemic of smallpox, having had 10,000 cases in eleven months. They struggled with this epidemic by means recommended, namely, as vaccination for syphilis and by isolation. Since then they have tried to have a compulsory vaccination act in the city, but have not been able to obtain it. But they have, however, an ordinance which holds the employer and the superintendent of schools responsible. They have now power to vaccinate and since that time vaccination has been very efficacious. They have no hesitation in isolating a case from the first hour of making the diagnosis.

At the Tuesday evening session, addresses of welcome were delivered by Hon. R. P. Roblin, Premier, for the Province of Manitoba; Hon. J. H. Ashtown, Mayor, for the City of Winnipeg; which were responded to by President Lewis.

ADDRESS OF PRESIDENT LEWIS.

The President, Dr. Richard H. Lewis, Raleigh, N. C., pointed out the difficulties in the way of establishing a national department of public health in the United States by the dual nature of the government and the distribution of constitutional powers. It is unquestionably to the interest of the general cause that each state should look after its own health work, acting always in a spirit of cordial co-operation with the great national bureau, which spirit the latter should be very careful to foster and encourage in every way, not only to its own interests, but that of the whole country. It would not be at all difficult to so conduct the national bureau as to have the state boards look to it as both guide and friend. In a general way, the kind of national bureau of health we ought to have, and the kind he thinks most desirable, is one including within its scope and management all the specific health agencies of the government now in existence, with the addition of others when needed, so thoroughly manned by the best men in their respective departments, and so richly endowed with funds, that work of the highest class in demonstrating the principles underlying all subjects bearing upon the public health can be done. Having by the study of the work of others and by original research settled upon the correct principles of sanitation, it should make a practical application of them to the actual every-day problems of preventive medicine in the sanitary management of the District of Columbia and the territories over which the United States has absolute control. It should give a clinical demonstration of the best methods as carried out by its own thoroughly educated and trained health officers. But it is as a source of information and education that we find the chief value of the bureau. First, in the education of its own officials and the health officers of the country; second, of the medical profession; and third, of the people.

In a bill now pending in Congress further enlarging the powers and duties of the Public Health and Marine-Hospital Service, authority is given for the establishment of a school of hygiene for the training, free of charge, of such health officers as may choose to attend. The granting of a certificate is allowed, but it should go further and grant the degree of Doctor of Public Health as is done in England. In this way we might hope for the gradual development of a sanitary profession of equal dignity with that of medicine or the other regular professions.

TYPHOID FEVER IN THE PROVINCE OF MANITOBA.

Drs. R. M. Simpson and A. J. Douglas, in a joint paper on this subject, directed their attention in particular to Winnipeg. Separating Winnipeg into two parts, north and south, they found in the south district, where nearly all houses were furnished with improvements, 549 cases of typhoid in the years 1903, 1904 and 1905. In the north district, where box closets dotted the landscape at frequent intervals, during the same period there occurred 1,983 cases. Particularly striking was the fact that as soon as the evenings began to grow cold in August, and the flies were driven indoors, the typhoid rate rose, and when the first hard frosts of winter set in, and the snow fell early in November, a diminution at once took place. Box closets offered every possible facility for flies to act as infection carriers, the excreta being above ground and entirely accessible and the light not excluded. It was the commonest thing not only to see flies swarming in these places, but also to see abundant evidence of their actually breeding in them. It was a frequent occurrence to visit houses and find two or three typhoid patients being cared for in one room where the cooking was done and food kept, the individual who was doing the cooking usually acting in a nursing capacity as well. Drastic regulations were undertaken. No case of typhoid was allowed to remain at home unless the conditions were such that proper isolation should be obtained and that excreta could be handled in a manner precluding the chance of infecting others. Rigid disinfection of the premises was carried out in all cases. The use of metal garbage receptacles was insisted on; also that manure should be kept in covered boxes and removed frequently and regularly to avoid affording breeding-places for flies. The Provincial Board of Health and the local department distributed literature on typhoid prophylaxis and on the care of cases. Circulars were issued instructing people to screen their houses and to keep down the number of flies by the use of fly paper and other means. Milkmen were instructed as to what their duties were. Careful supervision was exercised over the water supply, and a large number of public and private wells have been closed. Low lots were drained or filled in, rubbish heaps were burned or destroyed, lanes paved or graded, many insanitary premises were closed altogether and work along these lines is still going on. Last year some results from their efforts were evident and from indications the present year will exhibit an even more satisfactory showing, as up to the present they have only had 160 cases, which is considerably less than last year's total at the same time.

Dr. S. J. D. Pierce, of Winnipeg, pointed out the characteristics of typhoid fever in the Middle West.

EPIDEMIOLOGY OF TYPHOID FEVER.

Dr. H. W. Hill, of Minneapolis, traced the history of typhoid fever from the earliest stage to the present time. In old times it could be attributed to flies and to the mother of the child. Contact and fly contamination are the great causes of the spread of the disease.

Dr. John F. Anderson, Washington, D. C., agrees that flies are a fruitful source of infection, adding that milk is also a source of contamination, due to the lack of proper washing of the cans and other causes.

Dr. Henry Albert, Iowa City, Ia., exhibited a table showing the epidemics that have taken place through the carriage of bacilli from infected places, the period of infection extending over several years before the disease made itself known. An interesting case was reported early in the present year from Germany, in which 32 cases of typhoid fever developed among a population of 130. He referred to one case in which for fifty-two years a woman had been a carrier of typhoid bacilli and was the cause of an epidemic that prevailed last year. She was the keeper of a hotel. Women and children are the greatest carriers of the disease. One in every five hundred adults who had never had typhoid were chronic carriers. It is impossible to state how long the bacilli carriers act as such, but it is certain there are as many carriers as there are cases of the disease. Many cases are to be traced to the gall bladder. He is of the opinion that in a few years there would be sufficient knowledge to prevent the carriage of the disease, and one of the greatest preventives would be vaccination.

A STUDY OF TYPHOID FEVER IN RICHMOND (VIRGINIA), WITH CERTAIN CONCLUSIONS RELATING TO TYPHOID FEVER IN THE SOUTH.

Dr. Ernest C. Levy and Dr. Allen W. Freeman, of Richmond, in a joint contribution on this subject, pointed out the importance of prompt reporting of all cases of typhoid fever by the physician in attendance. Freer use by physicians of the laboratory aids to diagnosis which are now furnished *gratis* by all progressive city and state boards of health. Immediate inspection of every reported case, the securing of full information and the study of the data so obtained, with the view of determining the origin of the case. Instruction of the members of the household, at the time of this visit, in the elementary points in the epidemiology of the disease, and leaving printed directions covering the same points. Extension of the sewerage system, so that dry closets may be entirely abolished. Pending this, rigid rules, rigidly enforced, governing the construction and maintenance of dry closets in those sections which are forced to rely on this primitive means of disposal of excreta. The closing of all wells in the city, when a good public water supply is available, and the extension of this supply to reach all the people. Thorough dairy inspection and the rigid enforcement of a rule requiring every dairyman, under penalty of revocation of his permit, to report immediately any case of illness among the members of his household, well as among his employees and their families. Prompt investigation of such reports by the health department and the temporary shutting out of the milk wherever a typhoid case that cannot be perfectly isolated is found. Rigid supervision over the disinfection of excreta in all typhoid cases and the supplying of disinfectants *gratis* by the health department in indigent cases. The campaign against flies, the limiting of their breeding places and the screening of all typhoid cases on the one hand, and living rooms, dining-room and kitchen, on the other. Supervision over "carrier" cases, although just how this can be done legally and efficiently is at present an unsettled problem. Education of the public and the medical profession by lectures and literature in the main points of typhoid prophylaxis, especially in regard to the hygiene of the sick room and the danger of carrier cases. If the greater part of southern typhoid is of the residual type, the above measures constitute, in the light of present information, the chief means of lowering the typhoid fever death-rate in the South generally.

THE COMMERCIAL PASTEURIZATION OF MILK.

MR. B. R. RICKARDS and MR. W. M. CAMPBELL, Boston, said that a large amount of milk is pasteurized in Boston every day. Some of the milk of one contractor is pasteurized in the country and is again pasteurized here. The amount of milk pasteurized is probably increasing. It is evident that the larger part of the milk now pasteurized is before pasteurization above the limit established by the Board of Health of Boston, 500,000 bacteria to a cubic centimeter. Some of this milk is of very high bacterial content. Bacteria will increase much faster in pasteurized than in unpasteurized milk. Souring bacteria are killed out quicker by pasteurization than other forms. The tendency is, therefore, for such milk to remain uncurdled much longer than unpasteurized milk, the milk thus having a chance to putrefy. The pasteurization of milk affects the microscopic estimate of bacteria and leucocytes.

The authors conclude (1) that the commercial pasteurization of milk without restriction puts a premium on dirty milk, since dirty and old milk, otherwise unsalable, can then be put on the market. (2) Pasteurized milk may well mean cooked dirt, cooked dung and cooked bacterial products, and the laboratory is powerless to detect it. (3) The commercial pasteurization as at present practiced in Boston probably would destroy all disease-producing organisms with the possible exception of the bacilli of tuberculosis. The latter would probably be killed in the majority of instances. One machine only out of the three tested would be likely always to destroy the latter. The toxins produced by these and by the putrefactive organisms in dirty milk would undoubtedly escape unharmed and in many cases be capable of producing severe intestinal disturbances, especially in babies. (4) A false sense of security is undoubtedly conveyed by the term "pasteurized milk." The lack of security may come from either improper pasteurization, the pasteurization of improperly handled milk or improper care of pasteurized milk. (5) The unrestricted pasteurization of improperly kept, old or dirty milk should be prevented by regulations or ordinances prohibiting the pasteurization of milk containing over a certain specified number of bacteria per cubic centimeter, the bacterial limit being set with due regard to local conditions, especially the distance from which the milk comes. Such regulation should, of course, be coupled with a regulation forbidding the sale of milk above the bacterial limit established. (6) The law should require that milk heated above 140° F. should be marked heated or pasteurized milk. Pasteurized milk should not be sold as fresh milk. The pasteurization of milk in itself is probably not a harmful process and is to a certain extent a necessity under modern conditions in large cities, but commercial pasteurization should be carried on only under the most stringent supervision.

RESULT OF REINCUBATION AND REINOCULATION OF ATYPICAL DIPHTHERIA CULTURES.

MR. B. R. RICKARDS, MR. F. H. SLACK and DR. B. L. ARMS, Boston, presented the results of reincubation and reinoculation of 242 atypical cultures, proving that in many instances a final result may be obtained by these means and a report sent to the physician before the result can be obtained from a secondary culture. Of 242 such cultures, 120 proved either from these or subsequent cultures to be positive; 82 proved to be negative; no subsequent cultures received on the other 40, although requested. Of the positive cases, reincubation was positive and reinoculation negative in 20 instances. Reincubation was negative and reinoculation positive in 16 instances. Both were positive in 43 instances. Both were negative in 41 instances, the subsequent cultures being positive. The results tend to show that the diagnostician who reports positive or negative only is liable to be in error in about 50% of those cultures which contain atypical forms only. It is preferable in such cases to report "suspicious organisms present," request another culture and do further work with the culture already obtained. In many instances positive results were obtained from such cultures after but five to seven hours' additional incubation.

REPORT OF COMMITTEE ON STANDARD METHODS FOR THE DIAGNOSIS OF RABIES.

The committee gave a summary of its knowledge in regard to the diagnosis of rabies. In consideration of the fact that there are still many unsettled questions in regard to this subject, the committee recommends as a working method to use in diagnosing rabies the following: (1) Removal of central nervous system and of salivary glands under aseptic conditions. (2) Smears or impression slips made from ammon's horn, fixed in neutralized methyl alcohol and stained over the flame until steamed, with the following solution:

Methylene blue,	sat. alc. sol.,	30 ccm.
Fuchsin,	,, ,, ,,	5 ccm.
Dist. water,	,, ,, ,,	300 ccm.

(To be kept in ice box until used.)

If typical Negri bodies are demonstrated, the diagnosis of rabies can be made; if they are not found, similar slides should be made from the gray matter (1) of the cerebellum, (2) of the cerebral cortex (motor areas), (3) of the gray matter from other areas. At least six slides should be made, covering a wide area of gray matter in order to exclude the possibilities of localization of definite Negri bodies. If no Negri bodies or suspicious forms are found in any of the slides, and the examined material is fresh, the diagnosis is probably not rabies. If suspicious forms are found in fresh material, the diagnosis is probably rabies. If no definite forms are found in decomposing brains, the diagnosis, "doubtful," must be given. In all cases where the diagnosis is uncertain, animals must be inoculated with a fine emulsion made from material taken from various parts of the brain, and pieces from surrounding parts should be prepared for sections. Pieces should also be taken from the Gasserian and several spinal ganglia, for demonstrating the presence of the rabies tubercles as well as of the Negri bodies. Two rabbits or four guinea pigs should be used for the inoculation, which may be either subdural or intracerebral. The inoculated animals should be kept under observation for at least three months before a negative diagnosis is made. An emulsion from different parts of the brain should be made in sterilized neutral glycerine for later inoculations, if, for any reason, the first should be unsatisfactory. Decomposed brains should be allowed to remain in the glycerine for one to three weeks before inoculation, unless very weak solutions are used. In the latter case, negative results will necessitate another inoculation.

DR. B. L. ARMS, Boston, presented some of the unusual results from animal inoculation in one case of tuberculosis, three of rabies and six of glanders, all occurring in routine work, with the following conclusions: (1) All pigs inoculated for tuberculosis should be autopsied. (2) All negative rabies pigs should be kept under observation for twelve months. (3) All negative glanders pigs should be kept under observation for at least four weeks. (4) All pigs inoculated for glanders dying after forty-eight hours should be autopsied. (5) Any inoculation may give a freak result; consequently the unusual must be remembered.

COMMITTEE ON STANDARD METHODS OF CHEMICAL ANALYSIS FOR WATER AND SEWAGE.

The committee (Earle B. Phelps, Robert S. Weston, Edward Bartow, A. Elliot Kimberly, L. P. Kinnicutt) has been at work collecting information looking to a revision of the present standard methods. A circular letter has been sent out to water chemists and others. The present standard methods are in quite wide use and no very important changes are suggested. Some additional matter is needed, particularly in the case of mineral analysis of water and of the analysis of alum and other materials used in water and sewage treatment. The committee has planned a comparative study of all alternative methods and modifications, which will be undertaken by the various laboratories volunteering. The final form which the various methods shall assume will be determined by the results of the proposed study. Changes are proposed in the following determinations, some of the changes being only in minor points: Turbidity, free ammonia, organic nitrogen, nitrates, copper, hardness. Additional methods are planned as follows: Complete mineral analysis, manganese, free chlorine, alum and other commercial products.

STABILITY AND PUTRESCIBILITY IN SEWAGE FILTER EFFLUENTS.

Mr. Earle B. Phelps, Boston, said that the development of the modern rapid sewage filter has given a somewhat altered conception of the function of sewage disposal in general, and the rapid introduction of such filters has necessitated changes in schemes of sewage analysis and their interpretation. The most important result of all this is that we look now for qualitative changes rather than quantitative removal. The putrescibility test has become a most important one. The author deals with the subject of putrescibility with a view to arriving at a definition which will be acceptable to all, a method or methods of determining putrescibility which will harmonize with that definition and a method of expressing results so that they shall have quantitative significance. Putrescibility is shown to mean ultimately the availability of the material as a bacterial food. To avoid confusion and confliction of the present conceptions with various past uses of the term, it is recommended that the word "stability" would better represent the thing sought after in sewage purification. Stability is shown to be, not an absolute characteristic to be recorded as plus or minus, but a relative and quantitative property of organic matter, which requires quantitative treatment. The methylene blue or similar test is recommended for adoption as a standard test. It combines great simplicity with quantitative accuracy, a combination possessed by no other test. A method of recording results is proposed by which the time required to decolorize methylene blue can be properly weighted to give a stability factor which is an accurate index of the quality of the effluent.

STATE CONTROL OF PUBLIC WATER SUPPLIES.

Dr. C. O. Probst, Columbus, Ohio, said that if a polluted public water supply concerns only the community that uses it, there might be some argument in favor of Home Rule, although in this case it will be more properly Home Misrule. The state has become in a large measure one community and it must assume increased responsibility for the conditions which threaten the lives and health of the people. It should be the duty of the state to protect from pollution, as far as possible, all sources of water supplies of which use is being made. The question coming up in all populous states is, Can the streams and watersheds that must furnish public water supplies be kept free from contamination by laws and inspection? This may be possible for some of the states, but not for the great Middle West territory, where usually municipal and industrial wastes must go to the streams. Should these wastes be purified in all cases where the stream is used in any part of its course as a public water supply, or should water purification be depended on for protection? We cannot settle this problem for all communities in general terms. Each community affords a problem of its own. The state should decide what can best settle such questions.

MEANS TO PROMOTE THE HEALTH OF SCHOOL-CHILDREN.

Dr. M. L. Price, of Baltimore, began at the cradle and ended at the grave. School education is important. The first education of the child should be to save itself from death. Teachers should carefully instruct the children in methods of hygiene. There should also be medical inspection of the schools. Children are subject to many diseases. Children should not be allowed to exchange food or clothing or any article of personal use.

Dr. Samuel G. Dixon, Ardmore, Penn., strongly urged the vaccination of children before entering school, and said that all schools should have a regular medical inspection and regular disinfection.

Several other papers were read bearing on public health matters.

The following resolution was adopted:

Resolved, That the draft of a model law for the registration of births and deaths in the United States, based upon the essential requirements of registration, as laid down by the American Public Health Association in conjunction with the United States Bureau of Census, and approved by the American Medical Association and by the Conference of Commisioners on Uniform State Laws, be cordially endorsed by the American Public Health Association, and that the Committee on Legislation of the Section on Vital Statistics be authorized to co-operate on behalf of this Association with the representatives of the other organizations named and with the Bureau of the Census in making such minor changes as may be necessary and in urging the adoption of such legislation in non-registration states.

OFFICERS.

The following officers were elected for the ensuing year: President, Dr. Gardner T. Swarts, Providence R. I.; First Vice-President, Dr. R. M. Simpson, Winnipeg; Second Vice-President, Dr. Jesus Chico, Mexico City; Third Vice-President, Major Charles F. Mason, U. S. Army, Washington; Secretary, Dr. Charles O. Probst, Columbus, Ohio; Treasurer, Dr. Frank W. Wright, New Haven, Conn.

Section on Vital Statistics: Chairman, Dr. Chas. A. Hodgetts, Toronto; Vice-Chairman, Dr. Wm. H. Guilfoy, New York; Secretary, Dr. W. R. Batt, Harrisburg, Penn.

Section of Municipal Health Officers: Chairman, Dr. Wm. C. Woodward, Washington, D. C.; Vice-Chairman, Dr. A. J. Douglas, Winnipeg; Secretary, Dr. E. C. Levy, Richmond, Va.; Recorder, Dr. C. V. Chapin, Providence, R. I.

Laboratory Section: Chairman, Dr. J. J. Kinyoun, Washington, D. C.; Vice-Chairman, Dr. Wm. Royal Stokes, Baltimore, Md.; Secretary, Mr. B. R. Rickards, Boston, Mass.; Recorder, Dr. H. D. Pease, Albany, N. Y.

Richmond, Va., was selected as the place for holding the next annual meeting.

Book Reviews.

To Panama and Back. The Record of an Experience. By Henry T. Byford, M.D. Chicago: W. B. Conkey Company. 1908.

In this volume of 384 pages, well illustrated by photographs, the author has set down his personal experiences in a journey to the Isthmus of Panama. It is written in a familiar and readable style and should be of some value in guiding others through a like journey.

Essentials of Surgery. An Outline of Surgical Pathology, Diagnosis and Treatment. For Students and Practitioners. By Alwyne T. Compton, F.R.C.S. Illustrated. Chicago: W. T. Keener & Co. 1908.

This is a primer of surgery which will doubtless be useful to some third-year students cramming for their examinations. The question is again raised whether compends or primers have a place in the armamentaria of carefully-trained practitioners. For the general practitioner who has no time to consult the standard works on surgery, Compton's "Essentials of Surgery" may prove useful.

Estimation of the Renal Function in Urinary Surgery. By J. W. Thomson Walker, M.B., C.M. (Edin.), F.R.C.S., Hunterian Professor of Surgery and Pathology, Royal College of Surgeons of England (1907); Surgeon in charge of Out-Patients at the Northwest London Hospital and Hampstead General Hospital; Assistant Surgeon to St. Peter's Hospital. With 2 colored and 7 black-and-white plates; 34 figures in the text, and 32 charts. London and New York: Cassell & Co., Limited. 1908.

Walker's book of 275 pages is well worth owning and reading. It is the best brief, practical and scholarly essay on the subject of the renal function in urinary surgery which we have seen printed in the English language. The writing is well-balanced, judicial and reflective. Many of the newer methods of investigation are discussed and compared, but the author in no case shows himself a partisan. Realizing that pathology and physiology have come at last into their proper relations with surgery, as John Hunter foresaw, Walker makes for us a clinical study of the present means of estimating the renal function in surgical diseases of the urinary organs. He divides the book into two parts, — an estimation of the total renal function, and an estimation of the function of one kidney. He takes up systematically the symptoms and signs of renal failure; the value of urinalysis; the significance of the kidney as a filter, and its elimination of certain foreign substances. He then deals exhaustively with methods of diagnosis and with tests for the functional activity of each kidney, while he dwells earnestly on certain fallacies in the more familiar tests. The general surgeon will do well to consider the pages of this interesting book.

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RECENT VIEWS ON NEURASTHENIA.

The much-discussed subject of neurasthenia has been again most happily taken up by Dr. Jean Lépine at the French Congress of Medicine held at Geneva in September of this year. The pathogenic study of neurasthenic conditions should commence by that of normal fatigue and this by considerations on nervous energy. Energy is produced, not by the nervous system, but by the nutrition of the entire organism, the disturbances of which have, as a consequence, acted on the function of energy. In health this function is periodic, rest repairing fatigue.

Energy should be produced in sufficient quantity, likewise accumulated and consumed periodically. In the pathological state its production may be diminished, its use exaggerated and the regular periodical action disappear. The neurasthenic, often less active than the healthy man, does not rest completely. The reciprocal relationship between the nervous system and the entire organism forms in the normal condition a series of regular and energetic cycles. When the causes of perturbation are not so strong as the tendency of the organism to maintain the abovementioned law, vitiated cycles arise. These, also by the working of the reciprocal actions, have a certain tendency to become permanent. It is these vitiated cycles which form the pathological state.

Various intermediate conditions exist between the normal and the pathological state, which concern the psychic manifestations of the condition of fatigue as well as the physical symptoms. Mosso and Féré have pointed out that even in normal subjects fatigue increases the suggestibility, the tendencies to automatism, mental depression and atony. The fact that neurasthenics present to a high degree these various manifestations is not sufficient to authorize one to consider their state as a purely psychic one in origin. There is an identity of nature between physical and psychical energy, and there is no fundamental difference between muscular and cerebral fatigue. Between normal and pathological fatigue there is only a difference in intensity and duration.

The etiology of neurasthenic states presents, besides overwork and neuro-arthritism, a number of accessory causes, but no single one has, in a given case, an absolute pathogenic value. The pathogenesis includes various elements variously combined among themselves. Overwork does not act only in consuming the reserves, but also modifies the chemical process in the cells, rendering the latter less capable of producing new energy. It also results in the production of metabolism substances, the presence of which hinders the reactions of energy. The various infections act in the same manner, and their cellular sequelæ may be found both in the nervous system and in other parenchymatous organs. Intoxications, especially auto-intoxication, share much responsibility in a large number of neurasthenic conditions. Their manner of action is also a complex one; a study of the arterial pressure and urinary products is not enough at the present time to enable one to elucidate the problem. Clinically it may only be noted that a spontaneous hyperactivity of the emunctories, or the result of therapeutic action, occasionally attenuates the neurasthenic symptoms to a considerable degree. Not infrequently organic insufficiencies intervene in the production of the persistence of a neurasthenic state, but some are only localized asthenias and are rather more the effect than the cause. Especially when there is an insufficiency of an organ having an internal secretion one should be very careful in attributing to it an exclusive pathogenic part. The changes of such secretions, as, for that matter, in all instances of organic insufficiency, particularly manifest themselves by their general reaction and the reciprocal lesions that they engender. The organic disturbances susceptible of provoking a neurasthenic condition are nearly always polyglandular and polyvisceral, and they are, above all, the moderators of the general nutrition.

The pathogenesis of the neurasthenic states is not merely the toxic and autotoxic phenomena, opposed to which from the standpoint of the diminution of energy each person reacts in his own peculiar way. One should also take into consideration the hereditary antecedents and weaknesses of the nervous system, some acquired, others constitutional, the latter being more frequent. However, when there is a nervous debility at the outset it acts at the same time on the other great organic functions, and these hereditary nervous stigmata may be regarded as the result of infections and intoxications in the parents. Education plays a large share in the ultimate aptitudes of a child with the prospect of a neurasthenic future. By a rational education one may greatly reduce the danger resulting from nervous stigmata, while, on the other hand, these may be greatly accentuated when the education is badly carried out. Education is to be not only psychical, but the hygiene of nutrition and the physical development should also occupy a large place, and here again the functioning of the brain is inseparable from organic metabolism. No matter from what point of view one approaches the problem, whether one studies the various clinical or etiological types or the various symptoms of neurasthenic states, these always appear in the final analysis as a vicious condition of the function of energy in a necessary relationship with an organic element.

In close proximity to neurasthenic states, other conditions, such as melancholia or psychasthenia, also present examples of nervous depression, in which the psychic element predominates, while the motor disturbances are insignificant. The neurasthenic state may lead to this, not because it is in itself of mental origin, but because the disturbances of the mind have, like the neurasthenic state, an organic element.

Psychotherapy, so useful in patients of easy suggestion, is not a specific in neurasthenic conditions. It acts on one of their elements and is often particularly successful in neurasthenics who are undergoing a rest cure and a course in alimentary hygiene. The neurasthenic states are merely functional disturbances, and it is doubtful if there is any single affection which may properly be termed neurasthenia. There is, from Lépine's point of view, a pathology of energy, infinitely variable and complex, as, for example, the physico-chemical reactions of the cell protoplasm, the disturbances of which it portrays. Old nervous stigmata and acquired disturbances of nutrition keep up this pathological process.

It is evident from a study of the recent literature on the subject of so-called neurasthenia that the problem is being approached from various points of view and with results in clearness of conception which were not possible under the older hypothesis of neurasthenia as a more or less distinct disease entity. Whether the matter be approached from the physical side, as Lépine approaches it, or from the mental, it is clear that a complete understanding of the condition can only be obtained by a comprehensive view of all the phenomena presented, whether mental or physical.

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IMPROVEMENT OF MILK CONDITIONS IN NEW YORK.

In beginning an account of recent work in improving milk conditions, the late bulletin of the New York State Department of Health states that the harvest of death among bottle-fed infants is so appalling as to demand the best thought of every one connected with either the state or the local health departments in the solution of the problem of securing a safe milk supply. During the year 1907 there were 37,370 deaths of infants under two years of age, and 9,213 were due to diarrhea and enteritis. As careful investigators place the proportion of deaths between bottle-fed and breast-fed babies as 25 to 1, this would give 8,844 deaths from this cause among bottle-fed babies, a greater number than was caused by all other infections and contagious diseases, except tuberculosis, combined. As an index to the value of careful supervision of the milk supply, it was found that last year the death-rate per thousand from diarrhea and enteritis among children under two years for all the cities in the state having a population between 10,000 and 20,000 was .7878. Taking Cortland and Geneva as examples of places where good work has been done along milk lines for a number of years, and Hudson and Plattsburgh as examples of places where little or no such work has been done, the record is found to be as follows:

	Average Deaths.	Actual Number of Deaths.
Cortland,	9.083	7
Geneva,	9.852	7
Plattsburgh,	8.228	16
Hudson,	8.296	15

On Sept. 1 Dr. Ellis M. Santee, late dairy expert of the United States Department of Agriculture, and for a number of years health commissioner at Cortland, was added to the force of the State Health Department and placed in charge of the milk work. Four circulars were prepared as follows: No. 1, "Care of Milk on the Farm"; No. 2, "Care of Milk in the Home"; No. 3, "A Plan for the Improvement of a Milk Supply"; No. 4, "A Sample Ordinance for Cities and Villages to Adopt." Circular No. 3 was sent to twenty-five cities and villages which were known to desire help. This was followed by a visit, when local conditions were examined, after which such recommendations were made as seemed best for the guidance of the local health boards. In some places, after such visits, the local authorities have called a conference of consumers, producers, dealers and health officers, at which addresses have been made by the health officer or local physicians and by Dr. Santee, who has illustrated his remarks with lantern slides. These meetings have been productive of much good and have invariably been followed by the appointment of a dairy inspector by the local health board, and the adoption of a serviceable milk ordinance.

Arrangements have been made by the State Health Department with President Schurman, of Cornell University, for the joint prosecution of certain lines of special research work. One of the investigations will deal with market milk, having special reference to bovine and human tuberculosis, and will be conducted under the direction of Prof. Veranus A. Moore, of Cornell, and Dr. H. D. Pease, of the State Hygienic Laboratory. Another, under the direction of Prof. H. N. Ogden, will be for the purpose of determining the best method of disposal for creamery wastes, which the dairy farmers now commonly discharge into streams, with much resulting pollution.

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MEDICAL NOTES.

Dr. Thomas E. Satterthwaite Honored. — At the celebration of "Academic Day" of the University of Maryland, on Wednesday, Nov. 11, the degree of LL.D. was conferred upon Dr. Thomas E. Satterthwaite, of New York.

Dr. Grenfell's Work. — During the absence of Dr. Grenfell from his field of work in Labrador, Dr. John M. Little, Jr., of Boston, will take charge of the work at St. Anthony, and Dr. John N. Grieve, who came to this country from Scotland, will superintend the work at Battle Harbor.

Memorial to James Carroll, Major and Surgeon, United States Army. — A memorial tablet to James Carroll, major and surgeon, United States Army, was unveiled at the recent combined celebration of Academic Day of the University of Maryland and the one hundred and nineteenth anniversary of the founding of St. John's College, which embodies the departments of arts and sciences of the university. Upon the tablet is the following inscription:

James Carroll,
M. D. 1891 and LL.D. 1907.
Major and Surgeon U. S. Army.
Born in Woolwich, England, June 5, 1854.
Died in Washington, D. C., September 16, 1907.

As a member of the Army Commission which succeeded in demonstrating the mode of conveyance of yellow fever, he became an eminent contributor to science by his investigation, and a heroic benefactor of his country and of mankind by voluntary submission to the bite of an infected mosquito, whereby he suffered from a severe attack of yellow fever, produced for the first time by experiment.

Greater love hath no man than this, that a man lay down his life for his friends.

Erected by the Regents of the University of Maryland.

Dr. William H. Welch, of the Johns Hopkins, delivered the address at the unveiling, and told again the story of how, as a member of the Army Yellow Fever Commission, Major Carroll, who was graduated from the university in 1891, allowed himself to be bitten by a mosquito previously inoculated with germs of yellow fever, so that it might decide conclusively the method of transmitting the dread disease which had baffled investigators for years; of how Major Carroll contracted the disease, and how his action resulted in the recent effectual fight against the fever in tropical countries, notably in Cuba and the Canal Zone.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Nov. 17, 1908, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 94, scarlatina 63, typhoid fever 14, measles 18, smallpox 0, tuberculosis 49.

The death-rate of the reported deaths for the week ending Nov. 17, 1908, was 15.84.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Nov. 14, 1908, was 221, against 185 the corresponding week of last year, showing an increase of 36 deaths and making the death-rate for the week 18.62. Of this number 112 were males and 109 were females; 211 were white and 10 colored; 140 were born in the United States, 76 in foreign countries and 5 unknown; 48 were of American parentage, 131 of foreign parentage and 42 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 95 cases and 1 death; scarlatina, 70 cases and 2 deaths; typhoid fever, 18 cases and 4 deaths; measles, 16 cases and 1 death; tuberculosis, 41 cases and 15 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 25, whooping cough 2, heart disease 36, bronchitis 2 and marasmus 5. There were 23 deaths from violent causes. The number of children who died under one year was 42; the number under five years 58. The number of persons who died over sixty years of age was 61. The deaths in public institutions were 76.

Deducting deaths of non-residents, the total is 198. The corrected rate is then 16.69.

Bust of Pasteur. — Harvard University has recently received a replica of the bronze bust of Pasteur by Paul Dubois through the generosity of the directors and members of the Pasteur Institute of Paris. It is proposed to erect this bust, which is an admirable reproduction of the original, in some suitable place in the Medical School.

Appointment of Medical Examiners. — Dr. Paul H. Provandie, of Melrose, Mass., has been appointed associate medical examiner of the third district, Middlesex County. Dr. William O. Faxon, of Stoughton, Mass., has been appointed medical examiner of the fifth district, Norfolk County.

Lecture by Professor Bose. — Prof. Jagadis Chunder Bose, of Presidency College, Calcutta, last week addressed the Bowditch Club in Boston on the subject, "Response in the Living and Non-Living." The lecture was an interesting discussion of Professor Bose's well-known views on the irritability of plants and the close analogies to the reactions found in animal life.

Smallpox in Vermont. — Smallpox has appeared in epidemic form in Brattleboro, Vt. Upwards of forty cases have occurred in that city alone and arrangements are being made for their treatment in a special building. A number of towns in the southeastern part of the state and in New Hampshire also report cases. Many persons are being vaccinated.

Rabies. — Reports appear to show that rabies is spreading in Boston. Rabid dogs have recently been reported in the Brighton, Roxbury and Dorchester districts, and a number of persons have been bitten. The recent order of restraint recommended by the Board of Health, passed by the Board of Aldermen and finally approved by the Mayor seems under the circumstances a wholly wise precaution.

Trustees, Boston State Hospital. — Governor Guild has nominated the following trustees for the Boston State Hospital for the Metropolitan District: Dr. Walter Channing, chairman; Henry

Lefavour, Mrs. Guy Lowell, Joseph Koshland, Mrs. William H. Devine, George H. Leonard and Michael J. Jordan. Dr. Channing has long been interested in the movement toward a betterment of the system for the care of the insane, of which his appointment as chairman of the new Board of Trustees is a just recognition.

The Work of the National Child Labor Committee. — At the General Boston Medical Library Meeting, to be held in John Ware Hall, on Dec. 2, 1908, there is to be presented, in addition to the regular medical paper, the work of the National Child Labor Committee.

President Eliot, member of the National Committee, will preside, and short addresses by Mr. Everett W. Lord, General Secretary for New England, and Charles Gettemy, Chief of the Massachusetts Bureau of Statistics of Labor, will be delivered.

The medical paper will bear a direct relation to this work for the control of child labor and the prevention of harmful occupations and will be read by Dr. Joel E. Goldthwait, on the effect of attitude on the development of the child and the important relation of poise to the general health in adult life.

The meeting marks an attempt to bring before a body of influential physicians a matter of national importance, for which their sympathy should be enlisted.

An invitation is cordially extended to all members of the profession.

NEW YORK.

An Order for Dr. Thomas S. McParlan. — Dr. Thomas S. McParlan, one of the visiting physicians to St. Francis Hospital, has been made a knight commander of the Order of St. Gregory by Pope Pius X, in recognition of his free services to various Roman Catholic charities. Dr. Thomas Addis Emmet is the only other New York physician who has been similarly honored, and but four other persons in the archdiocese have received the decoration.

A Centenarian. — Mrs. Julia O'Brien died at St. Francis's Home for Chronic and Incurable Invalids, New York City, on Nov. 6, at the alleged age of one hundred and two years. She had been the mother of seven children who had grown to old age, but all died before her, the death of the last, a son, occurring two years ago, at the age of seventy-five. It is related of Mrs. O'Brien, who retained her jovial Irish bonhomie up to the last, that she had smoked her pipe regularly three times a day, a habit which she contracted as a preventive of seasickness during her five weeks' passage to America on the ship *John Bright* in 1833.

The Ashokan Reservoir. — The first permanent monument to commemorate the progress made by the city of New York on the great Ashokan reservoir, a triangulation tower marking the middle point of the largest dam in the world, was dedicated to Mayor McClellan by President John A. Bensel, of the Board of Water Supply, on Nov. 11. On this occasion an elaborate address was made by the mayor, and in the course of it he answered criticisms which had been made from time to time as to extravagant expenditures for the acquisition of lands required for the water supply system, and as to the needlessness of the Catskill project altogether. Having shown from actual figures that the Croton watershed would soon be entirely inadequate for the needs of the city, he stated that the best engineering ability in the country had been availed of in determining upon the Catskill supply. It had not been considered proper by the municipal authorities, he went on to say, to allow either a pressing need for water to exist in the city, or to allow, as in the case of some Western cities, a limit to be set to the growth of the city by the available supply of water. On account of the length of time necessary for construction operations, the Catskill scheme was undertaken early enough to allow for delivery to the city and thus avert serious shortage. He then gave some interesting figures by way of comparison with the Panama Canal, the only other great engineering work now in progress, as follows: Length of Panama Canal, 50 miles; Catskill aqueducts, 165 miles. Cubic yards of masonry in canal, 3,600,000; in Catskill scheme, over 8,000,000. Estimated excavation of earth, rock, etc., in canal, 35,000,000 yards; Catskill aqueducts, 58,000,000 yards. The Ashokan dam is situated in the Catskill Mountains almost 86 miles from New York. The area of the artificial lake to be made by the building of the dam will be about 13 square miles, and it will be 190 feet deep in some parts. In its construction it has been necessary to destroy a number of small villages and to remove about 13 miles of railroad. It is calculated that the Catskill water will be supplied by gravity at the northern limit of New York City with a head of about 290 feet above sea level and at the Battery with a head of about 275 feet. Water would thus rise without pumping to a height greater than that of a twenty-story building.

Current Literature.

New York Medical Journal.

Oct. 10, 1908.

1. Wright, J. *Mechanico-Biologic Standpoint in Medical Problems.*
2. Bierhoff, F. *Urologic Department of the German Dispensary.*
3. Walsh, J. J. *First American Medical School.*
4. Basch, S. *Stomach and Intestinal Gases.*
5. Fisher, M. K. *Electrotherapeutics.*
6. Hofhelmer, J. A. *Conservatism in Surgery of the Hands.*
7. Levy, I. H. *Splenic Anemia. Splenectomy. Blood Changes.*

Oct. 17, 1908.

1. Hupp, F. Le M. *Oration on Surgery.*
2. Bryant, W. S. *Middle-Ear Suppuration.*
3. Gulick, L. H. *Neuromuscular Co-ordinations having Educational Value.*
4. Jackson, A. B. *Artificial Hyperemia and Its Therapeutic Application (after Bier).*
5. Basch, S. *The Stomach and Intestinal Gases.*
6. Kingsbury, J. *Case of Lepra Tuberosa.*
7. Lathrop, W. *Foreign Bodies in Trachea and Stomach.*
8. Hartigan, J. W. *Traumatic Insanity.*
9. *Morrow, A. S. *The Cure of Inguinal Hernia under Local Anesthesia.*

9. Morrow believes that local anesthesia with 0.1% to 0.2% solution of cocain is the ideal anesthesic for inguinal hernia. In a large proportion of cases the operation may be performed absolutely without pain. Amputation of the omentum and separation of adherent gut may be accomplished without additional pain. At most the pain inflicted throughout the operation is less than that produced in opening an infected finger. [R. I. L.]

The Journal of the American Medical Association.

Oct. 10, 1908.

1. *Rotch, T. M. *Chronologic and Anatomic Age in Early Life.*
2. Lieberthal, D. *Idiopathic Multiple Hemorrhagic Sarcoma (Kaposi).*
3. Moulton, H. *The Treatment of Strictures of the Nasal Duct with Lead Styles.*
4. Davis, E. V. *The Quantity and Quality of Breast Milk during the First Two Weeks of the Puerperium.*
5. Snyder, J. R. *The Breast Milk Problem.*
6. Pisek, G. R. *Fallacious Standards employed in Artificial Infant Feeding.*
7. Jacobi, A. *The Gospel of Top Milk.*
8. Southworth, T. S. *High Fat Percentages in Infant Feeding.*
9. Cohn, E. *Hereditary Predispositions: Their Relation to Insanity and Some of Our Social Problems.*
10. Dorland, W. A. N. *Perithelial Sarcoma of the Uterus.*

1. Rotch contends that the arbitrary classification of children by their chronologic age is both illogical and unreliable, especially when applied to education and child labor. He suggests a standard based on the anatomic development. He has found that the anatomy of the bones of the wrist as revealed by the x-ray forms a satisfactory standard index of the anatomic age. The writer suggests alphabetic subdivisions depending on the different stages of development of the carpal bones and the lower epiphyses of the radius and ulna, to replace the classification by months and years of childhood. [R. I. L.]

The Journal of Experimental Medicine.

September, 1908.

1. Mallory, F. B. *The Results of the Application of Special Histological Methods to the Study of Tumors.*
2. *McCampbell, E. F., and White, D. S. *Further Studies on the Ophthalmo-tuberculin Reaction in Cattle.*
3. Lewis, P. A. *Further Observations on Anaphylaxis to Horse Serum.*
4. *Longcope, W. T., and Donhauser, J. L. *A Study of the Proteolytic Ferments of the Large Lymphocytes in a Case of Acute Leukemia.*
5. Pearce, R. M. *The Influence of the Reduction of Kidney Substance upon Nitrogenous Metabolism.*
6. Opie, E. L., and Barker, B. I. *Enzymes of Tuberculous Tissue.*
7. Barker, B. I. *The Enzymes of Fibrinous Exudates. The Effect of One Enzyme upon Another.*
8. Simon, C. E., and Thomas, W. S. *On Complement Fixation in Malignant Disease.*
9. Flexner, S., and Jobling, J. W. *An Analysis of Four Hundred Cases of Epidemic Meningitis treated with the Antimeningitis Serum.*

2. McCampbell and White investigated the value of the ophthalmo-tuberculin reaction in cattle. They believe that the ophthalmo-tuberculin test will reveal tuberculosis at as early a state as the usual subcutaneous test. The ophthalmo-reaction is of no value in determining whether vaccinated cattle are actively tubercular or not.

4. The leucocytes of the blood of normal persons and also of patients with a marked polymorphonuclear leucocytosis contain proteolytic enzymes which act in a neutral alkaline or acid solution. The cells in pus that is largely composed of polymorphonuclear leucocytes, and also the leucocytes in the blood in myelogenous leukemia, contain similar proteolytic enzymes which act best with an alkaline reaction. The leucocytes of the blood and of an enlarged lymph node from a case of large cell acute lymphatic leukemia contain proteolytic enzymes that act qualitatively like the leucocytes of pus and the leucocytes of the blood in myelogenous leukemia. On the other hand, the small lymphocytes of an enlarged lymph node from chronic lymphatic leukemia possess no proteolytic enzymes, and the large endothelial cells of hyperplastic lymph glands possess enzymes which are proteolytic only in the presence of acid. Hence the large cells of the so-called acute lymphatic leukemia do not seem biologically to be true lymphocytes, but are nearly related to the granular myelocytes. The writers believe that these large cells of acute lymphatic leukemia should probably be considered on the forerunners of the myelocytes. [R. I. L.]

Journal of Infectious Diseases.

October, 1908.

1. Barber, M. A. *The Rate of Multiplication of the Bacillus Coli at Different Temperatures.*
2. Collins, K. R. *The Value of the Agglutination Reaction and of Bacteriological Methods in the Diagnosis of Glanders.*
3. Heinemann, P. G., and Glenn, T. H. *A Comparison of Practical Methods for Determining the Bacterial Content of Milk.*
4. Goodman, H. M. *Variability in the Diphtheria Group of Bacilli.*
5. Gaylord, H. R. *The Resistance of Embryonic Epithelium, Transplantable Mouse Cancer and Certain Organisms to Liquid Air.*
6. *Wells, H. G. *Studies on the Chemistry of Anaphylaxis.*

6. Wells has collected the literature on the subject of anaphylaxis and considers the subject especially from a chemical standpoint. He also reports a number of experiments of his own in this field.

He finds that egg albumen, freed from the other proteins of egg-white by repeated crystallization, produces typically the anaphylaxis reaction. It sensitizes in doses as small as one twenty millionth of a gram; fatally in doses of one millionth of a gram. The minimum lethal dose for sensitized pigs is about one half a milligram by intraperitoneal injection, and about one tenth to one twentieth of a milligram when injected into the circulation. The unpurified mixed proteins of egg-white are much less active, suggesting an inhibitory substance in the crude egg-white.

The author believes that the quantity of egg-white that is fatal to sensitized pigs is so small that it seems improbable that the injected protein can cause death by splitting up and liberating poisonous substances in the space of time in which the reaction occurs. More probably if poisonous substances are produced they must be produced by the cells of the intoxicated animal, from some of the substances in its own body, or the whole reaction may be essentially different from the ordinary intoxication. The minuteness of the minimum sensitizing and intoxicating doses of pure egg albumen seems to indicate conclusively that, at least in the case of this particular protein, both the sensitizing and intoxicating agents are one and the same kind of protein molecule, or else two different portions of the same molecule.

That gelatin seems to be devoid of the power of participating in the anaphylactic reaction may be due to its paucity in aromatic radicals.

He believes that the destruction or reduction of toxicity of proteins by heat is due to the change in solubility of the proteins. Experimenting with the vegetable proteins, he finds that those proteins which are poor in aromatic radicals give very weak reactions.

He saturated the proteins with iodine but found no modification of specificity as has been found in the precipitin reaction. Tryptic digestion of serum furnished further evidence of the protein nature of the substances concerned in the anaphylactic reactions, for both sensitizing and intoxicating principles are attacked and slowly decrease in strength as the coagulable protein disappears. [W. B. R.]

JOURNAL OF MEDICAL RESEARCH.

OCTOBER, 1908.

1. McCONNELL, G. *Recurrent Liposarcoma of the Kidney.*
2. WALKER, R. E. *Opsonic Technic.*
3. DUVAL, C. W. *Septicemia with Acute Fibrino-Purulent Pericarditis.*
4. *PEARCE, R. M., AND SAWYER, H. P. *Concerning the Presence of Nephrotoxic Substances in the Serum of Animals with Experimental Nephritis.*
5. *WEIL, R. *The Hemolytic Reactions in Cases of Human Cancer.*
6. *LORD, F. T. *The Etiology of an Epidemic of Influenza. Relation of the Influenza Bacillus and Other Organisms to the Recent Epidemic in Boston (1907–08). Comparison with an Inter-Epidemic Period (1902–04).*
7. FROTHINGHAM, C., JR. *The Microscopic Anatomy of Trichinella Spiralis.*
8. AUSTIN, A. E. *The Proteolytic Enzyme of Human Milk.*

4. Pearce and Sawyer conclude that their positive results confirm the observations of Lindemann, Bierry and Pearce that the serum of dogs with various types of nephritis has a toxic action on the kidney, manifested by the appearance, for a short time, of protein and casts in the urine.

A complete series of control experiments offers no explanation of the protein other than as the result of injury to the kidney.

It has not been possible to demonstrate a nephrotoxic power for the serum of rabbits with experimental nephritis, and it is, therefore, manifestly improper to assume that this nephrotoxic power is a constant characteristic of the serum of all animals suffering from nephritis.

For this reason, although the phenomenon observed is suggestive and worthy of investigation on a larger scale, it should be utilized with caution in any theoretical explanation of the pathology of chronic nephritis.

5. Weil presents a series of experiments on hemolysis in human cancer, following out the line of work that has been done on the hemolysis occurring in dogs affected with the transplantable lymphosarcoma.

There were 31 cases of malignant tumors, of which 15 were in an early stage and 16 in an advanced condition. There were 3 cases of benign new growth. There were 42 cases of other diseases. Six of the cases were apparently normal.

Reasoning from his results, the author remarks that the reaction is not pathognomonic of malignant tumors early or late, that it occurs in a considerable proportion of other diseases and that a large proportion of tumors present an altogether different type of reaction. On the other hand, it must be admitted that a much larger percentage of malignant new growths present this type of reaction than do cases of other diseases.

The results of the experiment are, on the whole, far less characteristic than in cases of tumors of dogs and do not lend themselves at present to diagnostic application.

The author, however, explains his results by a discussion of the complex nature of the problem of malignant disease in man.

6. Lord examined the sputum from a number of patients during the late epidemic of influenza, and also from a number of influenza patients during an interepidemic period.

His statistics tend to show that the influenza bacillus must be excluded as the principal cause of this disease.

He concludes that in the absence of other discoverable causes we are forced to the conclusion that such various organisms as the influenza bacillus, the pneumococcus, the micrococcus catarrhalis, the pyogenic cocci, and others singly or combined are responsible not only for the interepidemic, but also for these epidemic cases with the clinical picture of influenza. [W. B. R.]

ANNALS OF SURGERY.

OCTOBER, 1908.

1. *WARREN, J. C. *Cancer of the Mouth and Tongue.*
2. *HOTCHKISS, L. W. *A Method of Operation in Extensive Cancerous Growths of the Cheek involving the Jaw.*
3. MASTIN, W. M. *Recurrence at a Late Period after Operation for Cancer of the Breast.*
4. *WIENER, J. *Osteoplastic Resection of the Costal Arch, followed by Resection of Lesser Curvature of Stomach and Esophagus; and Esophagostomy.*
5. PRINGLE, J. H. *Notes on the Arrest of Hepatic Hemorrhage due to Trauma.*
6. RANSOHOFF, J. L. *Cause of Sudden Fall in Blood-Pressure while Exploring the Common Bile Duct.*
7. HALPENNY, J. *A Method to Facilitate the Avoidance of Infection during Intestinal Anastomosis. (Preliminary Report.)*
8. GARROW, A. E., AND KEENAN, C. B. *Primary Carcinoma of the Appendix.*
9. MONKS, G. H. *Carcinoma of the Appendix Vermiformis.*
10. *BRINSMADE, W. B. *Chyle Cysts of the Mesentery.*
11. GARDNER, F. E. *The Etiology of Hydronephrosis.*

1. On the basis of a series of 172 consecutive cases of cancer of the tongue and mouth from the Massachusetts General Hospital Clinic during the years 1890 to 1904, Warren reviews the entire subject of oral carcinoma with especial consideration of recent advances in method of operative attack. Poirier's study of the lymphatic drainage of the mouth has shown that in early cancer of the anterior two thirds of the tongue only one side of that organ need be sacrificed, whereas thorough removal of the cervical glands is always indicated. Block dissection by Crile's method, in two stages, with intubation and packing of the pharynx and temporary compression of the external or common carotid is the procedure apparently attended by the best results. The value of post-operative exposure of the open wound to x-ray is not determined. Of the 172 cases reported, 50 were inoperable, 10 refused operation. Of the remaining 112 operated, 16 (or 14.2%) were free from recurrence over three years after operation, of which 10 were of the tongue, 5 of the lower jaw, and 1 of the soft palate. There were no cures in cancer of the upper jaw or cheek. The operative mortality ranged from 5% in intrabuccal resection of the tongue to 35% in resection of the lower jaw, a gross average of 18%. In all situations of the primary growth recurrence was more often local than lymphatic, and of the traced fatal cases, in only one did recurrence occur at an interval of more than three years after operation.

2. Hotchkiss suggests a form of block operation for carcinoma of the cheek which he has employed in 3 cases. The essential of his technic consists in first reflecting a plastic flap from the neck in such a way as to expose the infected lymphatic glands, which are removed *en bloc* from below upward, with ligation of the external jugular and facial veins and of the external carotid artery just above the superior thyroid. The growth is then widely excised with a portion of the lower jaw and the defect closed by swinging up the cervical flap above described. Of the 3 cases treated by this proceedure, one died of recurrence in four months, one is living with recurrence and one is without recurrence three months after operation.

4. Surgery of the lower esophagus and cardia for malignant disease is in its infancy. After a brief historic review of the subject, Wiener reports a case in which he did an osteoplastic resection of the seventh, eighth and ninth left ribs, and thirty days later a partial gastrectomy (involving the lesser curvature), resection of esophagus and gastro-esophagostomy. The gastro-esophageal suture leaked, leading to death of the patient in eleven days of subphrenic abscess. In view of this catastrophe, the author suggests the preferability, after preliminary resection of the costal arch, of resecting the stomach and esophagus, closing the lower end of the latter and doing gastrostomy or jejunostomy; and at a still later third stage doing esophagostomy at the root of the neck to provide for escape of fluids running down from the mouth.

10. Brinsmade reports 2 cases of chyle cyst of the mesentery and collects from the literature 42 others, with a tabulation and discussion of results. Etiologically these cysts represent obstruction of afferent lacteals, usually by a degenerated lymph gland. They are, therefore, not true cysts, but accumulations of chyle between the two peritoneal layers of the mesentery. They may be congenital or acquired, single or multiple. They can hardly be differentiated from other fluid abdominal tumors, the only possible diagnostic sign being increased pain after meals, due to greater lymphatic activity. The best treatment is to suture the mesenteric wall of the tumor to the parietal peritoneum, incise the cyst, evacuate its contents and drain. Extirpation of the cyst is inadvisable, because unnecessary and attended by considerable mortality (33⅓%). [R. M. G.]

Surgery, Gynecology and Obstetrics.

October, 1908.

1. *Coffey, R. C. *The Principles on which the Success of Surgical Treatment of Retrodisplacements of the Uterus depends.*
2. *Alexander, W. *The Operations of Ventrofixation or Ventrosuspension of the Uterus and Shortening the Round Ligaments.*
3. *Smith, R. R. *Scopolamine-Morphine Anesthesia.*
4. *Pfannenstiel, J. *Hebosteotomy compared with Other Procedures in the Management of Labor in Contracted Pelves.*
5. *Heineck, A. P. *Perforating Wounds of the Uterus Inflicted during the Course of Intra-Uterine Instrumentation.*
6. *Moynihan, B. G. A. *The Diagnosis of Duodenal Ulcer.*
7. Suttner, C. N. *Further Studies of Broad Ligament Plication for Uterine Retroversion.*
8. *Hirst, B. C., and Knipe, N. *Primary Implantation of an Ovum in the Pelvic Peritoneum.*
9. *Ballard, C. N. *Primary Carcinoma of the Body of the Uterus.*
10. *Krug, F. *Immediate versus Deferred Operation for Intra-Abdominal Hemorrhage due to Tubal Pregnancy.*
11. *Friedman, L. V. *Puerperal Salpingitis.*
12. *Leicester, J. C. H. *A Short Note on the Delivery of the Fetal Head after Decapitation.*
13. Ashhurst, W. W. *A Case of Vesicovestibular Fistula involving the Whole Urethra.*
14. Churchill, J. F. *Report of a Case of Hernia of the Ovary, Accompanied by Strangulation, in a Child Five Months Old.*
15. Connell, F. G. *Radical Operation for the Cure of Oblique Inguinal Hernia.*
16. *Stoddard, T. A. *The Diagnosis and Treatment of Ectopic Gestation.*
17. Seelig, M. G. *Appendicitis resembling Ureteral Calculus.*
18. Niemack, J. *Case of Choledochotomy for Cholesterin Stone with Absence of Gall Bladder.*

1. Coffey's plication method of treating retrodisplacements of the uterus is based on a series of animal experiments, showing that two peritoneal surfaces brought and firmly held together adhere, blend and obliterate and form a strong support for internal organs. He describes the routine, Kelley, Alexander and Mann methods of treating retrodisplacements, and his own, in which he makes a double fold of the anterior fold of the broad ligament, together with the round ligament, returning these to the anterior superior surface of the uterus. By using absorbable sutures the round ligaments are later loosened, and act, because of their muscular fibers, as pulleys, while the peritoneal surfaces of the broad ligaments coalesce and suspend the uterus. He has demonstrated his results in three cases later operated on for other causes.

2. Alexander cites two cases of great pelvic pain and bladder disturbances following ventro-suspension or fixation. He believes it is a harmful method and contrary to nature's rules, and sets forth the advantages of a properly done external shortening of the round ligament.

3. Smith discusses scopolamine-morphine anesthesia, and claims no outward effects in 229 cases. The mixture should be freshly prepared and put up in bottles each containing scopolamine, gr. 1-50, and morphia, gr. ½. One third of this dose is given two and one-half hours before operation; the second third, one and one-half hours before operating, and the remainder one-half hour before operation if necessary. The patient goes to operation in a peaceful, quieted state. Preparation for operation is completed before ether or chloroform is started, and the amount of anesthetic is greatly reduced, only 2–6ʒ of chloroform being required, even in operations lasting one to two hours. The patient sleeps quietly for from two to five hours after operation, and nausea, vomiting and retching are practically absent. The author holds that it adds in no way to the danger of anesthesia and does away with its unpleasantness at the start and after operation.

4. Pfannenstiel describes hebosteotomy or pubiotomy as a desirable procedure in cases of small or contracted pelves when not contra-indicated by the presence of fever. He does not wait for spontaneous delivery after hebosteotomy but delivers immediately while the patient is still under anesthesia. He does a subcutaneous operation.

5. Heineck collected 160 cases of perforation of the uterus during intra-uterine instrumentation and tabulates the cases, stating method of accident, treatment and results. These are all the cases recorded in German, French, English and American literature between 1895 and 1907. Most of the cases were treated expectantly and recovered. There were 42 deaths and 108 recoveries; expectant treatment in 66 cases, with 4 deaths; laparotomy in 72 cases, with 52 recoveries and 17 deaths.

6. Moynihan believes that the diagnosis of duodenal ulcer rests more on the anamnesis than on the physical findings. He discusses symptoms, especially hunger-pain, and advises operation in all cases in which a definite lesion can be demonstrated. He considers gastro-enterostomy the best operation, but excision of the ulcer when it is remote from the pylorus and not liable to cause obstruction later by cicatricial contraction. He advocates the no-loop gastro-enterostomy, with a vertical position of the intestine at the point of anastomosis.

8. Hirst and Knipe report a case of primary implantation of the ovum in the pelvic peritoneum demonstrated at operation and cite two other authentic cases. At operation the uterus, tubes and ovaries were found and proven microscopically to be normal, and the ovum was imbedded in the broad ligament and covered with peritoneum.

9. Ballard discusses at length the histology of the uterine lining and its relations to epithelial degenerations. He states that cancer of the body of the uterus develops either from the lining or from the glands and reports a case ushered in by repeated severe hemorrhage, instrumental perforation of the uterus and hysterectomy. He reviews the literature on the subject and concludes that malignant tumors of the body are slower in growth and have fewer symptoms than those involving the cervix, and that total hysterectomy is the only treatment.

10. Krug, in discussing immediate versus deferred operation for internal hemorrhage in tubal pregnancies, concludes that many cases are operated on too soon, that one should wait for the profound collapse to subside, and with the aid of morphia, heat, raising foot of bed, wait till the patient's condition is noticeably improved. Operation, however, he believes, should never be delayed beyond forty-eight hours.

11. Friedman discusses puerperal salpingitis and cites twenty-one cases with typical symptoms. There are two

forms, gonorrheal and septic, not possible always to differentiate clinically. The onset is acute and generally on the third day with pain, tenderness, tumor at times and pus in the lochia. There are three types: (1) In which the tube is closed at the peritoneal end. These drain well and are only liable to widen the uterus. (2) In which the tube is closed at both ends. These have more acute pain. (3) In which the tube is closed at the uterus end. These may be followed by pelvic peritonitis. The course is short as a rule, the prognosis good and the treatment symptomatic, seldom requiring the abandonment of nursing.

12. Leicester, in delivering the fetal head after decapitation, and to prevent its slipping about, inserts a blunt hook as far as possible into the fetal mouth and steadies the head in this way by traction while applying the forceps or cephalotribe.

16. Stoddard, in discussing the diagnosis of ectopic gestation, lays stress on some unusual symptoms: (1) Overdue menstrual flow without pain, the previous periods having been painful; (2) pain referred to the point of the scapula. Stoddard makes no further attempt to remove blood and clots from the abdomen at operation than by having the assistant flush the pelvis with warm salt solution during the operation. [E. H. R.]

The Lancet.

Oct. 17, 1908.

1. Powell, R. D. *An Address on a Just Perspective in Medicine.*
2. *Brunton, L. *Blood Pressure in Man, its Measurement and Regulation.*
3. Adamson, H. G. *Two Cases of Multiple Rodent Ulcer.*
4. Phillips, T. *The Treatment of Acute Appendicitis as it comes under the Care of the General Practitioner.*
5. Weiss, C. F. R. *On Some Modern Methods for the Clinical Examination of Urine and Gastric Juice by the General Practitioner.*
6. Groves, E. W. R., and Stack, H. E. *A New Operating Table.*
7. Garland, C. H. *An Account of the Post-Office Sanatorium Movement.*
8. Hirsch, C. T. W. *Motoring Notes.*

2. Brunton gives a description of the various methods now used for estimating blood pressure in man and in animals, with remarks on the advantages and disadvantages of each. There are many illustrations and diagrams. [J. B. H.]

British Medical Journal.

Oct. 17, 1908.

1. *Philip, R. W. *The Antituberculosis Program.*
2. Smith, E. *Remarks on the Use and Misuse of Iron Remedies.*
3. *McCulloch, H. D. *On the Analogy between Spontaneous Recoveries from Cancer and the Specific Immunity induced by X-ray Irradiations of the Lymphatic Glands Involved.*
4. Edwards, A. D. *The Future of the Ailing Poor-Law Child.*
5. Kelly, B. C. *On the Administration and Dose of Staphylococcus Vaccine.*
6. Klein, E. *"Flies" as Carriers of the Bacillus Typhosus.*

THE BRITISH MEDICAL ASSOCIATION.

Section of Medicine.

7. *Osler, W. *Discussion on Splenic Enlargements other than Leukemic.*

Section of Diseases of Children.

8. *Guthrie, L. *Discussion on Fatty Acid Intoxication.*
9. Moon, R. O. *The Prognosis of Infantile Convulsions.*

Section of Pathology.

10. Moore, F. C. *Discussion on Compensatory and Regenerative Changes in the Liver.*
11. *Ledingham, T. C. G. *The Typhoid Carrier Problem, with Some Experiments on Immunity in Carriers.*
12. Ruffer, M. A., and Willmore, F. G. *The Production of Immunity against Dysentery Toxin.*

Section of Dermatology.

13. Sequeira, T. H. *On Calmette's Ophthalmo-Tuberculin Reaction.*
14. Jones, H. L. *The Treatment of Skin Diseases by Electrolytic Medication.*

1. *Cf.* Boston Medical and Surgical Journal, Oct. 22, 1908.

3. McCulloch believes that glandular enlargement in cancer is a sign that the lymphatic system is endeavoring to combat the disease and that in operation such glands should not be removed. He gives the details of 4 cases of cancer of the larynx, considered inoperable, which he treated by x-ray exposures on the enlarged glands in the neck, hoping by so doing to stimulate them to further activity. The good results so far obtained in these cases confirm him as to the soundness of his views.

7. Osler, Bouchard, Gibson, Rolleston and others discuss the subject of non-leukemic enlargement of the spleen in a careful and thorough manner, presenting many illustrative cases.

8. Guthrie concludes that acid intoxication in children results from a deranged condition of the liver due to the presence in it of excessive fat. A liver may become superfatted due to (1) excess of fat and carbohydrates in diet, (2) inability to metabolize fat ingested, (3) starvation, (4) sepsis, (5) poisoning by chloroform. These points he considers in detail. Spriggs, in discussing this subject, believed starvation to be an important factor, while in chloroform poisoning he believes it is not the withholding of food but chloroform in excess which causes trouble. Stiles, McDonald, Moynihan, Leathes and others took part in discussing this subject.

11. Ledingham, as a result of his investigations, believes that 3% to 4% of typhoid convalescents become typhoid carriers; three times as many are females as compared with men. Although healthy carriers, careful in personal hygiene, are only a slight source of danger, others are a very grave danger and all are potential sources of infection. [J. B. H.]

Deutsche Medizinische Wochenschrift. No. 41.

Oct. 8, 1908.

1. *Feer, E. *The Treatment of Pertussis.*
2. *Wilms. *The Movable Cecum as Cause of Many Cases of So-called Chronic Appendicitis.*
3. Schultze, K. *Clinical Observations on Fulguration Treatment of Malignant Tumors.*
4. *Ledermann, R. *The Practicol Volue of the Serum Diagnosis in Syphilis.*
5. Port, Fr. *A Small Epidemic of Spotted Fever.*
6. Scheier, M. *The Significance of the Röntgen Rays in Rhinology.*
7. Mintz, W. *Late Asphyxia after Total Extirpation of the Larynx.*
8. Korte, H. *A New Compound of Phosphorus and Cod-Liver Oil.*

1. During the first year of life pertussis has a higher percentage of mortality than measles, diphtheria or scarlet fever. By the fourth year it stands lower than these other diseases in the percentage of its fatalities. As there is no specific treatment for this disease, prophylaxis is all the more important. Infected and exposed individuals should be quarantined for ten to fourteen days, and then only allowed in presence of other children if free from cough or catarrh. In the prodromal stage, the chances of contagion are most frequent and become less and less so after the paroxysms appear. Disinfection is not necessary after a case.

An early diagnosis before the whoop begins is impossible, but a continued cough, despite treatment without râles, is suspicous. The treatment consists in good general hygiene without sudden changes of air. The patient must be kept as quiet mentally as possible. Dry foods which tend to enter trachea must be avoided. Of medicines there are specifics offered. none of which is specific; also there are sedatives. Of these, bromoform is strongly recommended by the author.

2. Many cases which are considered chronic appendicitis this author thinks to be in reality cases of movable cecum. With a movable cecum, pain occurs when the nerves in the mesocolon are stretched. This happens when the cecum

becomes filled with feces and on account of its weight sinks down in the abdominal cavity. Wilms mentions cases that were not relieved of their symptoms after appendectomy. These cases showed a movable cecum at the operation. In view of these facts he advises a suturing of all ceca that are found at the time of appendectomy to be movable.

4. Ledermann has tried the serum complement-binding test in many stages of syphilis and finds that it may be positive in all. It is positive in a higher percentage of cases during the time when symptoms are present. A negative test is of no value. A positive result simply means that the patient has had syphilis at some time. So with vague symptoms it may aid in diagnosis. When positive, it is not an indication against marriage, as people with a positive reaction have healthy children and do not infect their wives. It suggests in these cases the value of further treatment before marriage as a safeguard. It is a test of value in post-mortem work, and also might be well used upon prostitutes in communities where they are controlled by the authorities. [C. F., Jr.]

Die Therapie der Gegenwart. Heft 10.

October, 1908.

1. His, W. *Modern Heart Stimulants.*
2. Cloetta, M. *The Influence of Long-Continued Digitalis Administration on the Normal and the Pathologic Heart.*
3. Popoff, P. H. *Influence of the Climacteric on the Female Heart.*
4. *Melchior, E. *Tuberculous Arthritis.*

4. Melchior gives the reports of 7 cases of acute arthritis associated with tuberculosis of lungs, pleura or other tissues. The onset in these cases is milder than in the ordinary infectious type of arthritis; usually many joints are attacked, the joints containing, as a rule, much fluid, which shows a large preponderance of mononuclear cells in the sediment, in strong contradistinction to the joint fluid of acute infectious arthritis. No tubercle bacilli were ever found in the joint fluids. Salicylates are noteworthily useless. There is generally stiffening of the joints after convalescence. The author believes that the bacilli get into the joints, starting irritation, but are only transient. The diagnosis is to be made on the association with phthisis, on the lymphocytes in the joint fluid in the acute stage, and on the resistance to salicylates. Treatment is unsatisfactory. [R. D.]

Miscellany.

OCTOBER MEETING OF THE BOSTON SOCIETY OF EXAMINING PHYSICIANS AND SURGEONS AT THE BOSTON CITY CLUB.

On the evening of Oct. 21, the Boston Society of Examining Physicians and Surgeons held their regular fall meeting at the Boston City Club.

At 8 o'clock Dr. Francis D. Donoghue formally opened the meeting and introduced the first speaker, Dr. Richard C. Cabot, Assistant Professor of Clinical Medicine at the Harvard Medical School, who took for his subject, "Physical Diagnosis." He began with the head and, briefly touching on the innumerable points indicating abnormal conditions, gave what was one of the most clearly defined talks on practical diagnosis that the Society had had the privilege of listening to. He told of some mistakes that he had made, from which he had learned much, and cautioned the members to always examine the external ear, looking for the so-called gouty tophi. He said that these were very often overlooked and yet were far easier to detect than other signs of the gouty diathesis; he also called attention to the importance of looking at the gums for the so-called lead line, stating that, whereas it was considered generally to be a blue line across the gums, it was in reality a series of dots, which were black and not blue. The neck, he said, should be examined for pulsating tumors, which were not always aneurisms because occasionally we would find an extra-cervical rib with the subclavian vessels arching over it, which might easily be taken for an aneurism. In examining the heart, he said he felt that many were rejected for life insurance on account of systolic murmurs at the apex who should not be, for in his opinion such murmurs seldom indicated organic disease unless they were accompanied outwardly by physical signs. He went on to say that he had kept a record of children in whom mitral murmurs had been found, and the greater percentage had disappeared before they reached adult life, and he also thought that the transmission of murmurs was not nearly so important as is generally considered. He recommended examining the abdomen by the aid of the hot bath rather than by an anesthetic. He briefly touched upon the examination of the blood, and maintained that the paper test when properly made for hemaglobin was all that was necessary unless the red corpuscles were diminished. As to the examination of the urine, he said that experience showed that the twenty-four-hour amount and the specific gravity were of more importance than any of the chemical tests, and he felt that too great significance had been attached to the finding of albumen and casts. Urea, in his opinion, was of little value as a diagnostic sign. In the examination of the stomach contents the physical evidences were more important than the chemical tests, and this also applied to the examination of the feces.

The next speaker was Dr. Morton Prince, Professor of Nervous Diseases at Tufts Medical School. His subject was, "Psychotherapy." He said that the present movement was really the result of three, and he named Charcot as the originator of the first movement. He traced them up through the so-called fat and food theory of Weir Mitchell, touching upon Christian Science, which he said originated with Quimby and later developed into the great cult of Mrs. Eddy. He said, however, that Christian Science is an empiricism devoid of true science and lacking in aught but personal experience. "There seems to be, particularly among our clerical friends, the erroneous idea that psychotherapy is a new thing, but, as a matter of fact, the science is as old as the hills, the only new feature being the modern technic employed. As to the Emmanuel Movement, recently organized along these lines, I will say but little. It is a fact, however, that this clinic established by the Emmanuel Church is not primarily a psychotherapeutic movement. Primarily it is a spiritual and clerical movement. Religion has no more to do with psychotherapy than mathematics, but religion may have a psychotherapy of its own in that by the producing of an uplifted and exalted feeling certain practical results are obtained. Scientific psychotherapy, however, is based on a psychotherapy applied to the underlying disease. I might say that these religious movements which have sprung up about us have received their impetus largely through the fact that the medical profession has sadly neglected this branch of the science which is so closely allied with their profession, and also, through the failure to introduce the study of psychotherapy in the medical schools."

The speaker said that for the first time in the history of medical colleges, Tufts had introduced a course of study for the treatment of functional nervous diseases. He also said that at present there were but two beds in the Massachusetts General Hospital for nervous patients, and he expressed a hope that the erection of a separate institution to accommodate at least twenty patients would soon take place.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, NOV. 7, 1908.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	—	—
Chicago	539	136	Waltham	8	1
Philadelphia . . .	—	—	Pittsfield	3	1
St. Louis	—	—	Gloucester	4	1
Baltimore	193	40	Brookline	10	2
Cleveland	—	—	North Adams . .	7	2
Buffalo	—	—	Chicopee	6	4
Pittsburg	—	—	Northampton . .	5	1
Cincinnati	—	—	Medford	5	—
Milwaukee	—	—	Beverly	4	—
Washington . . .	—	—	Leominster . . .	3	1
Providence . . .	—	—	Hyde Park . . .	1	0
Boston	170	46	Melrose	3	1
Worcester	34	9	Newburyport . .	6	2
Fall River	20	11	Woburn	6	2
Cambridge	29	11	Westfield	4	2
Lowell	32	10	Marlboro	—	—
Lynn	15	3	Revere	1	1
New Bedford . .	24	11	Attleboro	2	0
Springfield	32	9	Peabody	—	—
Lawrence	23	8	Adams	5	—
Somerville	19	9	Clinton	6	1
Brockton	10	1	Gardner	2	—
Holyoke	8	6	Milford	—	—
Malden	12	4	Watertown . . .	2	1
Chelsea	7	1	Plymouth	—	—
Newton	5	1	Weymouth . . .	3	1
Salem	4	—	Framingham . .	7	2
Haverhill	7	4	Southbridge . . .	—	—
Fitchburg	11	2	Wakefield	—	—
Everett	7	2	Webster	—	—
Taunton	8	4	Arlington	1	—

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING NOV. 14, 1908.

C. H. T. LOWNDES, surgeon. Detached from the "South Dakota" and ordered home. Nov. 10.

E. M. SHIPP, surgeon. Detached from the "Pennsylvania" and ordered home. Nov. 10.

W. S. HOEN, passed assistant surgeon. Discharged from treatment at the Naval Hospital, New York, N. Y., and ordered to the Naval Recruiting Station, Oklahoma City, Okla. Nov. 11.

W. H. SHORT, assistant surgeon. Detached from the Naval Recruiting Station, Oklahoma City, Okla., and ordered to the "Macdonough" for duty with the Third Torpedo Flotilla. Nov. 11.

M. DONELSON, assistant surgeon. Detached from duty with the Third Torpedo Flotilla and ordered to the "Celtic." Nov. 11.

SOCIETY NOTICE.

NORFOLK DISTRICT MEDICAL SOCIETY.— A meeting will be held at Masonic Temple, 171 Warren Street, Roxbury, on Tuesday evening, Nov. 24, 1908, at 8 o'clock. Dr. William P. Bolles will read a paper on "Medical Ethics." Light refreshments will be served.

WILLIAM H. ROBEY, JR.,
Secretary.

ERRATUM.

IN the publication of an illustration accompanying Dr. John B. Wheeler's paper on "A Case of Pyonephrosis and Renal Calculi in a Pregnant Woman," in our issue of Oct. 22, the stones were reduced to one fourth their actual size. Inasmuch as the writer states that "the exact size of the stones is shown in the accompanying photograph," a false impression of their actual size is given. As represented, the stones are only one fourth of the size of the original specimens.

RECENT DEATHS.

HOWARD EUGENE WILSON, M.D., M.M.S.S., of Chester, died Sept. 16, 1908, aged fifty-five years.

FRANCIS FULLAM PARKER, M.D., M.M.S.S., died in Chicopee, Oct. 29, 1908, aged sixty-seven years.

ARMOND MIGNAULT, M.D., M.M.S.S., died in Salem, Nov. 13, 1908, aged fifty-three years.

JOHN BAUER, an expert manufacturer of Röntgen-ray tubes, died recently in the German Hospital, Brooklyn, from x-ray cancer. He was admitted to this hospital some time ago, and later was transferred to the Skin and Cancer Hospital in Manhattan for observation, after which he was sent back to the Brooklyn institution. Some three weeks before his death the left arm and the fingers of the right hand were amputated.

DR. DAVIES COXE, of New York, died in Dresden, Saxony, on Nov. 7, after an illness lasting several years, the immediate cause of death being acute pleurisy. He was the son of Col. Robert E. Coxe, of the Confederate Army, and was born in Paris in 1862. He received his early education at the Episcopal High School at Alexandria, Va., and in 1884 was graduated from the medical department of the University of Virginia. After coming to New York he served as interne at the Woman's Hospital, and later practiced for fifteen years, when the state of his health compelled him to retire.

DR. DANIEL WINANS SMITH, a well-known physician of Newark, N. J., died on Nov. 10, at the age of seventy-five years. He was graduated from the medical department of the University of the City of New York in 1856, and had practiced for nearly fifty years in the house in which he died.

BOOKS AND PAMPHLETS RECEIVED.

Green's Encyclopedia and Dictionary of Medicine and Surgery. Vols. VIII and IX. Chicago: W. T. Keener & Co. 1908.

Clinical Bacteriology and Hematology for Practitioners. By W. D'Este Emery, M.D., B.Sc. Third edition. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1908.

Linacre Lecture, 1908, St. John's College, Cambridge. Thomas Linacre. By William Osler, M.D., F.R.S. Cambridge: University Press. 1908.

Instinct and Health. By Woods Hutchinson, A.M., M.D. New York: Dodd, Mead & Co. 1908.

A Manual of Diseases of the Nose and Throat. By Cornelius Godfrey Coakley, A.M., M.D. Fourth edition, revised and enlarged. Illustrated. New York and Philadelphia: Lea & Febiger. 1908.

Diseases of the Nervous System. By Alfred Gordon, A.M., M.D. (Paris). Illustrated. Philadelphia: P. Blakiston's Son & Co. 1908.

Guide to the Clinical Examination and Treatment of Sick Children. Second edition, greatly enlarged and rewritten. By John Thomson, M.D. Illustrated. Edinburgh and London: William Green & Sons. 1908.

Report from the Pathological Department, Central Indiana Hospital for Insane, 1903–1906. Indianapolis. 1908.

Aids to Ophthalmology. By N. Bishop Harman, M.A., M.B. (Cantab.), F.R.C.S. Eng. Fourth edition. Illustrated. New York: William Wood & Co. 1908.

Aids to Tropical Medicine. By Gilbert E. Brooke, M.A. (Cantab.), L.R.C.P. (Edin.), D.P.H., F.R.G.S. Illustrated. New York: William Wood & Co. 1908.

Neurological and Mental Diagnosis. A Manual of Methods. By L. Pierce Clark, M.D., and A. Ross Diefendorf, M.D. Illustrated. New York: The Macmillan Co. 1908.

Anthropological Papers of the American Museum of Natural History. Vol. I, Part V. The Hard Palate in Normal and Feeble-Minded Individuals. By Walter Channing, M.D., and Clark Wissler, Ph.D. Reprint.

An Alabama Student and Other Biographical Essays. By William Osler, M.D., F.R.S. London: Henry Frowde. New York: Oxford University Press, American Branch. 1908.

A Text-Book of Operative Surgery. By Warren Stone Bickham, M.D., Phar.M. Third edition, greatly enlarged. Illustrated. Philadelphia and London: W. B. Saunders Co. 1908.

Genito-Urinary Diseases and Syphilis. By Edgar G. Ballenger, M.D. Illustrated. Atlanta, Ga.: E. W. Allen & Co. 1908.

Anatomie und Mechanismus der Skoliose. Von weil. Dr. Carl Nicoladoni. Illustrated. Berlin und Wien: Urban & Schwarzenberg. 1909.

Irremovable Cancer. By William Seaman Bainbridge, Sc. D., M.D. Reprint.

Applied Surgical Anatomy, Regionally Presented. By George Woolsey, A.B., M.D. Second edition, enlarged and thoroughly revised. Illustrated. New York and Philadelphia: Lea & Febiger. 1908.

A Handbook of Suggestive Therapeutics, Applied Hypnotism, Psychic Science. By Henry S. Munro, M.D. Second edition. St. Louis: C. V. Mosby Medical Book Co. 1908.

Gonorrhea in Women. By Palmer Findley, M.D. St. Louis: C. V. Mosby Medical Book Co. 1908.

Applied Physiology. By Robert Hutchison, M.D., F.R.C.P. New York: Longmans, Green & Co. 1908.

Practical Points in Anesthesia. By Frederick Emil Neef, B.S., B.L., M.L., M.D. New York: Surgery Publishing Co. 1908.

Original Articles.

THE RELATION BETWEEN HUMAN AND ANIMAL TUBERCULOSIS, WITH SPECIAL REFERENCE TO THE QUESTION OF THE TRANSFORMATION OF HUMAN AND OTHER TYPES OF THE TUBERCLE BACILLUS.*

BY THEOBALD SMITH, M.D.,
George Fabyan Professor of Comparative Pathology in Harvard University Medical School.

The tendency of practical medicine to move faster in theorizing than the demonstrated facts and accumulated data of observation and experiment warrant is again manifest in the hypotheses which have recently been advocated concerning the relation existing between human and animal tuberculosis, and the portals of entry of the tubercle bacillus. Any clear insight into these problems is greatly complicated by variations in the virulence of the bacilli on the one hand, and variations in the degree of natural and acquired immunity in the invaded host on the other. As a result, opinions and views concerning fundamental questions differ widely. In the following pages I shall endeavor to confine myself to the experimental and other evidence bearing on the hypothesis recently put forth: that bovine tubercle bacilli may assume the human type in the human subject, and that human bacilli may become bovine in type in cattle.

A survey of the investigations thus far published reveals a practical unanimity among investigators that there exists a sharp, easily recognized difference between the type of bacilli isolated from sputum or from the lung tissue in pulmonary tuberculosis of man, and the type isolated from tuberculous cattle. The designation "human" and "bovine" which I applied tentatively to these types in 1898 has been generally accepted.[1]

The difference between these types pertains to morphological, cultural and pathogenic characters. On serum the human type is longer and slenderer than the bovine type and slightly curved. It grows readily from the start, often profusely, and after the first generation multiplies freely on glycerine agar and glycerin bouillon, forming on the latter a thick, nodular or puckered membrane. The colonies on serum are in the characteristic S-shaped bundles first described by Koch. The bacilli in the bovine colonies are grouped irregularly without any distinct conglutination into bundles. After the bovine baclilus has vegetated for several generations on egg or serum it will begin to grow feebly on glycerin agar and bouillon, where it forms a very delicate membrane, suggesting tissue paper, with occasional thickenings in it.

After a fairly vigorous growth has established itself on glycerine bouillon, the bovine type presents the peculiarity of converting a bouillon, containing 5% glycerin and of a certain degree of acidity to phenolphtalein, into an alkaline medium. The human type does not do this. At the end of one to two months the bovine type is alkaline, the human type acid. The acidity of some types reaches 4% of a normal solution; that of other types but 1.5% to 2%.

It will be impossible for me in this paper to go into any details concerning this test, but I hope to present the method and its pitfalls in more detail in a future paper, and incidentally meet some of the criticisms leveled against it. All that it will be necessary for me to state here is that after a trial of seven years I find the acid or alkali production of different strains, under cultivation from one to fourteen years, constant. In all experiments in which the identity of cultures is at stake, that is, in experiments designed to test the capacity for transformation of different races by passages through animals, the reaction curve of the culture should be carefully studied beforehand as an important aid in recognizing it.

The third striking distinction between the human and the bovine type is revealed in their action upon rabbits and cattle. The bovine bacillus is highly pathogenic for these species; the human type is not. Though the bovine bacillus slowly degenerates in virulence with prolonged cultivation, yet its virulence for these species is remarkably tenacious. In 1906 a bovine culture isolated by me twelve years before and kept growing on glycerin agar was still capable of killing a calf in a dose of 10 mgm. injected into a vein. Doses of 2.5 and 5 mgm. failed to do this.[2] It is well known that many strains of the human type have been used without the slightest harm upon cattle for purposes of immunization.

With these two types before me, I urged, now ten years ago, that the relationship between animal and human tuberculosis be subjected to renewed, thorough scientific investigation. During these ten years an enormous amount of labor has been expended on this problem, and great progress has been made. The bovine type of the tubercle bacillus has been detected in man, but almost exclusively in infections pointing to the digestive tract as a portal of entry. It has been found in the tonsils, the cervical lymph nodes, the mesenteric lymph nodes and in other organs in the generalized disease starting from these primary foci. It is probable that De Yong[3] and Arloing[4] isolated it from sputum. But the fact remains that bovine infections are essentially alimentary in origin and localization, and largely restricted to childhood. At the same time, the human type has been found in the same lymph node infections, and apparently any diagnosis as to which organism might be encountered by an examination of the lesions, during life or post mortem, is at present impossible. In three cases, Kossel, Weber u. Heuss[5] found both types in the same body. In one of these the two types occurred in the same culture and were finally separated with great difficulty. A rough and liberal estimate would make from one fourth to half the cases of tuberculosis starting in the cervical and the mesenteric lymph nodes bovine in origin. This achievement, to which so many have contributed, has placed our knowledge concerning the infection of man from cattle on a firm basis.

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* Read before the International Congress on Tuberculosis at Washington, D. C., Sept. 30, 1908.

Recent years, however, have brought forth two doctrines which have tended to unsettle this dearly bought and clearly-cut bacteriological victory. These doctrines are: (1) The transformation of the three types of tubercle bacilli one into the other, and (2) the more or less exclusively alimentary source of tuberculosis. This is really a necessary corollary of the doctrine of the transformability of types to account for the almost exclusive presence of the human type in pulmonary tuberculosis. This possibility has presented itself to all investigators. It was first suggested by me as worthy of careful investigation in 1898.[1]

The data upon which the doctrine of transformability is based are: (1) The reciprocal immunizing properties of bovine and human bacilli; (2) the changes undergone by bovine tubercle bacilli during cultivation; (3) the occurrence of so-called intermediate types, and (4) the results of some experiments in which certain strains passed through a series of animals have undergone modification.

The reciprocal immunizing properties of bovine and human bacilli are a strong argument for their close relationship, but not necessarily one establishing their identity. That these two types stand very near to each other cannot but force itself upon the attention of all who study them at close range. We know that they have a common toxic basis in tuberculin, and probably come from a common ancestor, but the question whether the two types have become so specialized by adaptation to different hosts as to have lost the capacity for being transformed, one into the other, is still unanswered. The real mechanism by which immunity is induced, and the components or products of the bacilli chiefly responsible for it, must first be known before we can use this phenomenon as evidence of identity.

The changes undergone by bovine tubercle bacilli after one or more years of cultivation are a slow reduction of virulence and an increased saprophytism. As a rule, cultures on glycerin agar and bouillon cannot be distinguished by their appearance from the human type after several years of cultivation. The richness of growth in a given time is practically the same. These changes, visible to the naked eye, are not accompanied by any other marked alterations, however. The reaction curve in bouillon remains practically the same, and the rate of the loss in virulence is no greater than with human cultures. The gap between them, therefore, remains the same. Temporary modifications may also be observed. Some years ago I noticed a sudden decided change in the morphology of the bacilli and in the gross appearance of the cultures of three bovine strains in coagulated[6] serum which accidently contained a slowly liquefying bacillus. After the cultures had been purified by a single passage through rabbits, the original characters at once returned in all three cultures. Recently, in isolating a bovine strain on Dorset's egg medium, I found one tube containing large smooth colonies of tubercle bacilli such as I had not seen before, while the rest contained the usual very minute colonies. A microscopic examination revealed a contaminating coccus in this one tube. It has happened several times that the first transfers of human cultures strikingly resembled the avian type of growth. In subsequent cultures this completely disappeared. On the other hand, an avian culture, originally from a pigeon and now ten years under cultivation, can still be picked out from among twenty to thirty other stocks of mammalian cultures. These random illustrations show that bovine bacilli may undergo temporary modifications which simulate more trenchant differences. If carefully sought for, explanations are usually forthcoming. The causes being removed, the appearances characteristic of the type return. These changes I attribute to alterations in the outer membrane of the bacilli, whereby they become more sticky and perhaps, also, more permeable to nutritive substances. In the case of impure cultures, the enzymes of the adventitious bacteria may accomplish this. In fact, the entire scale of degenerations witnessed during prolonged cultivation of the bovine bacillus from first to last is at present most easily explained by some kind of degeneration of the outer membrane or capsule. These changes do not necessarily have anything to do with a change in the type of the organism, although they may simulate or run parallel to the usual characters of other types.

The occurrence of so-called intermediate types is reported by many observers. Cultures of this class cannot be ranged, we are told, under the typical bovine and human types. The aberrant features pertain either to cultural or pathogenic manifestations. From the descriptions it is not always clear whether such aberrant cultures were followed long enough to determine the temporary or permanent character of the differences noted.

It is, of course, no unexpected thing to find in the same species of bacteria cultures slightly different from each other. This has occurred whenever any well-defined species of bacteria has been subjected to prolonged scrutiny. The importance or value of such differences must be carefully determined. A culture isolated by me in 1902 from a child and pronounced bovine from its effect on rabbits and cattle grew with great difficulty. After six and one-half years of artificial cultivation it is still easily distinguished from four bovine strains growing with it by its backward growth. Even under the microscope, the bacilli to-day fail to show those changes which are noticed in bovine cultures of similar age. All that we can say of this stock is that it has strongly resisted deterioration and in this respect deserves to be regarded as a variety.

The other character on which these intermediate types are founded is higher or lower virulence, according as we compare them with the bovine or the human type. This character taken by itself should not be regarded too seriously. That virulence should slightly fluctuate about a standard is as natural as that leaves of the same tree, or red corpuscles from the same individual, or other biological entities, can be grouped around a mean. In all cases differences should be re-examined after a certain period of cultivation, and not at once the inference drawn that they are permanent. There are many conceivable ways in which virulence might be slightly raised or slightly lowered. Bovine bacilli vegetating for a long time in a tuberculous udder, or in tubercular bronchopneumonia, could hardly be expected to be as virulent as those discharged from a newly opened focus. Similarly, long-standing pulmonary tuberculosis with cavity formation in man might furnish bacilli of lower virulence than a fresh case, following in close succession several other cases, each derived from the preceding. We have no good reason to deny the existence of bacilli of the human type which, owing to special conditions, might, after intravenous inoculation, prove fatal to calves. This position has been assumed by Baumgarten and his pupils, and one of the latter (Tatewossianz) [7] goes so far as to maintain that there is no satisfactory proof that the bacilli from man which have been referred to the bovine type are actually of bovine origin. Some of the so-called intermediate types are said to grow more vigorously at the start than the true bovine bacillus. This may be accounted for without destroying the identity of types. The rare occurrence of strains of very low virulence which follow the reaction curve of the bovine type in glycerin bouillon is perhaps more significant, especially if this character persists after prolonged cultivation.

Some of the aberrant strains encountered in man and domestic animals may represent a degenerated bovine type; others may belong to the human type augmented temporarily in virulence. In weighing or estimating the value of these differential characters, we must distinguish between a merely transitory temporary change and a more permanent difference, and above all we must keep in mind the distinction between passive degeneration in, and active adaptation to, the changed environment found in a foreign host. This passive degeneration of the bovine type which is observed regularly in artificial cultures after years, goes on, I am inclined to believe, in all hosts other than the bovine race, for none of the bovine types which I have isolated from man, horse, swine and cats seemed to have just the maximum virulence of bovine bacilli isolated from cattle directly. However, my observations have been too limited to be used for generalizations. Degeneration in virulence, associated, perhaps, with more active growth, must be regarded as a natural phenomenon affecting bacteria as well as other forms of life, when taken out of their usual environment. That it may eventually lead to change of type is unproved, but not to be denied.

To what extent foreign animal hosts may modify bovine bacilli is a problem whose importance has not escaped others. The Royal Commission has promised us researches in that direction, and the investigations of Lydia Rabinowitsch [8] on birds are along this line. Indeed, much work has been done already. Perhaps the most suggestive are the results from swine. These animals are becoming more and more infected with tuberculosis, and, so far as I have been able to learn, all the cultures which have been isolated are bovine in type. The three I have studied are typically so. Although the pig may be artificially infected by feeding human bacilli, yet we have still to find a spontaneous case due to the human type. In this species, evidently no appreciable modification takes place. Among other species both bovine and human bacilli have been encountered.

In general it may be stated that cultures from foreign hosts have not been studied with that care and circumspection demanded by the problem to be solved. The spontaneous infection of species other than man and cattle is a great experiment of nature, and this experiment should be utilized as thoroughly as possible in the future in determining what changes, if any, are caused by foreign hosts which do not as a rule transmit the disease to others of the same species.

The most important data for estimating the possibility of a transformation of types are furnished by the passage experiments with different species of animals. Such experiments have been reported by Nocard, Ravenel, von Behring, the writer, de Yong, Dammann and Müssemeier, the English Tuberculosis Commission, Mohler and Washburn, the German Imperial Health Office, Shattock *et al.*, and O. Bang.

Those who would to-day undertake experiments of this kind must expect a very rigid scrutiny of details surrounding such experiments. Unfortunately, many details are left to the imagination of the reviewer, for they are too numerous to be recorded.

Without going into minutiæ concerning the various passage experiments, it may be stated that they can be roughly separated into two groups: (1) Those in which cultures only were employed, and the bacilli recovered each time between two successive passages; and (2) those in which either tuberculous tissues only or tissues alternating irregularly with cultures were used to continue the passages.

Of the first group, the following may be mentioned: Von Behring, Roemer, and Ruppel [9] succeeded once in increasing the virulence of human bacilli by passing them through a goat. Other attempts with the same stock failed. The writer passed bovine and human cultures through a series of rabbits without any appreciable change.[10] A vigorously growing old bovine culture was isolated after six months' sojourn in a heifer without having lost any of its saprophytic vigor.[2] Kossel, Weber and Heuss [11] passed one human culture through four goats, the same through three cattle, a second strain through five goats and a third through three cattle without changing the characters of the type. Stanley Griffith [12] and F. Griffith, for the Royal Commission, passed bovine strains through series of chimpanzees, baboons, monkeys, dogs, guinea pigs and through a pig. Their conclusion is that "the bovine bacillus is very retentive of its special cultural characters and high virulence." In general, the results of these passages have been negative so far as any recognizable modification of type is concerned. When we compare these with the other group of experiments, those in which ground-up tubercular tissues were injected, we find a different outcome.

De Yong[13] inoculated a goat with a human culture. After the death of the goat, which occurred three years and one hundred and forty-five days after inoculation, he passed tissues from this case and cultures through a guinea pig, goat, calf, guinea pig and calf. Another series starting with the goat mentioned consisted of a guinea pig and two calves. In both series the last calf died of generalized tuberculosis within a short time.

Ravenel[14] passed a human culture through five calves, using suspensions of tissues after the first. A decided jump in virulence occurred after the first passage. Dammann and Müssemeier[15] passed a slightly virulent culture through goats with the aid of tissue suspensions and obtained a bovine type after the fourth and fifth passages. Shattock *et al.*[16] passed sputum through pigeons without producing any noticeable changes. Passage experiments with tubercular tissues are also reported by A. Eastwood for the Royal Commission.[12] Three cultures at first slightly virulent became highly so; all were classed with the bovine type. Mohler and Washburn[17] increased the virulence of two human cultures by passage through cattle. The tissues used for subcutaneous injection were obtained in one case from a rabbit and a calf in succession; in the other from a rabbit, a dog and a cat. Both these strains are reported by them as following the reaction curve of the human type in glycerine bouillon. Lastly, O. Bang,[18] by the use of cultures and tubercular tissues, claims to have converted bovine into avian bacilli by passages through fowls and rabbits.

Most of these experiments have been reviewed and criticised by others, and their vulnerable features pointed out. To analyze them in detail would be impossible, and I venture simply to state my own inferences briefly. Four interpretations may be placed upon them: (1) They may be due to the accidental introduction of new strains during the experiment, or the use of mixed strains from the start. (2) They may be accounted for by the rehabilitation of an originally bovine culture modified or degraded in one way or another by passages through other hosts, or saprophytic vegetation in cavities, etc. (3) They may be due to the augmentation of virulence by the peculiar methods used, without change of type. (4) They may be due to an actual conversion of human into bovine types.

The third interpretation is the one which I think meets the situation best. While some of the experiments are faulty, I think that it is improbable that in all these cases there should have been introduced adventitious strains. The increase in virulence obtained by the injection of tissue fragments is probably due to the protection afforded by the tissues to the injected bacteria. The repeated transfer of such material tends towards a selection of bacilli which become more virulent in consequence. There is no reason to deny the possibility of an increase in virulence of bacilli from one type, which are made to flourish forcibly and under unnatural conditions in animals in which such type does not occur. But the increased virulence does not mean change of type. Before we can safely accept the transformation of the bovine into the human type, or the reverse, it must be shown that the bacilli correspond in every particular to the type into which they are supposed to have been converted, and they must maintain the characters of the type under prolonged cultivation. They must also produce the type of disease anatomically and histologically obtainable with the natural virus of the same age. To simply register augmentation or diminution in virulence does not prove that the type has been altered. It must also be shown that the virus obtained by passages is capable of infecting in the natural way, by feeding or inhalation, or both, for there is at present no evidence at hand that these subcutaneously or intravenously produced artificial strains can successfully compete with the natural strains, i. e., enter through the usual portals in small numbers, and maintain a continued existence by producing disease.

The most recent work of O. Bang[18] has not yet been repeated by others; hence I hesitate to consider it seriously at present. Bang seems to have converted a number of strains of bovine into avian types. The ease with which this has been done should make reproduction of his actual experiments relatively simple. All of his results, however, could be explained as due to the accidental presence of the avian bacillus. The first experiment might indeed be interpreted as a case of mixed bovine and avian culture separated by means of a fowl, a rabbit and a guinea pig. Before accepting his conclusions, it will be necessary to repeat his experiments in a territory relatively free from the avian disease, and with all precautions against contact with pigeons, rats, mice, etc., for his work indicates that avian tuberculosis is prevalent in Denmark and that he actually isolated an avian culture from cattle. It will also be necessary to know how long the avian characters persist in subsequent cultures, and whether they produce the typical histological lesions of the avian disease in susceptible animals. Lastly, a strain so readily changed should be equally ready to return to its former state when passed through cattle. But, granting that there has been no admixture with avian strains occurring either in his cultures or in the fowls used by him, I believe that his results are capable of explanation on the following lines. Any modification of the outer envelope of the bovine bacillus by enzymes of the pigeon would influence both its appearance in cultures and its virulence, for it would be more easily destroyed in certain species. If, however, such modified characters persist indefinitely, either in animals or in cultures, and render the cultures indistinguishable from the avian type, we must consider the transformation a settled fact.

The time has not yet come for us to state positively that one type can or cannot be transformed into the other. The very nature of the methods employed leaves a big gate for errors to sneak in, and the proof if it ultimately comes will be more in the nature of a majority vote than a demonstration. In the meantime we may safely take the ground that any regular or wholesale conversion of bovine into human bacilli in the human body is out of the question, as contradicted by most of the experimental evidence thus far presented and by certain observations made on the occurrence of the spontaneous disease. We know that human tuberculosis can exist without the aid of bovine tuberculosis, and an important aid in the final solution of this question will be the study of human tuberculosis in such regions where the bovine disease does not exist, and where the dairy products are not shipped in from countries in which the disease prevails.

Among the first to call attention to the prevalence of the human disease in the absence of the bovine disease was Kitasato[19] who in 1904 pointed out that human tuberculosis exists in Japan in all types, although the bovine disease does not enter as a factor. In a village in northern Sweden Regner[20] described recently an unusual number of cases of tuberculosis not only pulmonary but glandular in type. Bovine tuberculosis could not be found by official veterinarians, and tuberculin gave no reaction in any of the local herds. Recently Heymann[21] has called attention to a number of places where cow's milk is either a very insignificant factor or none at all in the feeding of infants and children, and where human tuberculosis is very prevalent. I am also informed by Dr. A. B. Withington that human tuberculosis is very prevalent on the Labrador coast, but that milk and dairy products are very scarce. Perhaps more foci of this nature will be discovered in the future. A thorough study of the tubercle bacilli found in such places would throw fully as much light upon the questions before us as any number of passage experiments performed amid the dangers of outside infection.

On the other hand, there are good reasons for continuing investigations to determine whether an occasional transformation does not occur. For, basing our inferences upon the work already done, we must admit that such transformation has not yet been demonstrated, but that its possibility cannot be denied. The rare combination of conditions necessary to effect a new creation of this kind would probably make it of little practical importance. The experiments already made which give some hope in this direction indicate that only certain viruses, passing through certain species of animals and in a certain definite order might accomplish the feat. Whether any one will ever discover this hypothetical combination and unlock the mystery of bacterial races for at least one species must be left for the future to answer. For the practical sanitarian I venture to predict it will continue to remain then, as now, an academic proposition.

In conclusion, I wish to suggest the following lines of research, to be carried on with the most reliable and discriminating methods devised up to the present:

1. A continued study of cases of pulmonary tuberculosis with the view of ascertaining if the bovine type is exclusively responsible for any cases in which a regular discharge of tubercle bacilli takes place.

2. A further study of the transformability of tubercle bacilli by passage of tissues containing bacilli and guarded from all possible sources of error, together with a most careful examination of the nature and permanency of the changes induced.

3. A study of the varieties of tubercle bacilli among populations where dairy products coming from tuberculous cattle can be excluded as a contributory cause.

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ON CERTAIN EVIL TENDENCIES IN MEDICINE AND SURGERY.*

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IN glancing over the early volumes of the BOSTON MEDICAL AND SURGICAL JOURNAL, 1828–1829, I have been much impressed by the thoroughness of the men prominent in the medical and surgical history of Boston and the Massachusetts General Hospital, as illustrated in their clinical reports of cases. In sharp contrast with this painstaking study, apparently the invariable method of procedure in those early days, is the widespread tendency at the present time toward hasty and ill-considered diagnoses.

Illustrative of this tendency toward insufficient study, when means of positive diagnosis are available, not to say attractive, the following experience seems appropriate:

A man past middle life was sent to my wards at the Massachusetts General Hospital with the diagnosis of enlarged prostate, made by a skillful, experienced and conservative out-patient surgeon.

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* Read before the Medical Society of the County of Kings, Brooklyn, N. Y., on Dec. 17, 1907.

The next morning I found, prepared for prostatectomy, this man whom I had not seen. Rather than disappoint him, I ordered him etherized and made preparations for operation.

In introducing this patient to the advanced students of the fourth-year elective surgery, I was obliged to admit that I really knew nothing about his case; that I saw him for the first time then, under ether; that I had repeated to my classes time and again for years that such an introduction was one to be severely criticised and that no man ought to say at such a time, when prolonged observation was perfectly safe, that he had made other than a careful and painstaking study, the study essential to a mature and refined opinion; and, finally, that even if such study had been made by others even more competent than himself, a review of the whole case, with his own decision, was nevertheless a duty which he, the operating surgeon, owed to himself as well as to the patient; that unless such a review and judgment were rendered by the operator, he would become, as so many have said the surgeon has become, nothing but a tool in the hands of the diagnostician, an automaton, so to speak, a senseless piece of machinery made to carry out the mandates of a higher intelligence. In this case, nevertheless, the complete anesthesia enabled me to make an examination which without an anesthetic would have been unsatisfactory and misleading. And yet comparatively brief observation, even without anesthesia examination — in a patient like this a procedure of some danger — would have resulted undoubtedly in the diagnosis of inoperable cancer, which diagnosis the opportunity for thorough examination made possible and impregnable.

This case, the most recent one as I write, is perhaps not as appropriate as many others. It adds strength, I think, to the argument in favor of exploration, willy-nilly; it adds some weight to the opinion so prevalent that *certainty of inoperability* demands in practically every case an operating-table demonstration of the diagnosis.

But the necessity of absolute accuracy in many cases is not just at present under discussion. I am as radical as the most radical in that question, as I hope to demonstrate; it is the resort to the knife as the first step rather than the last that makes, in my opinion, one of the most prolific of the evil tendencies of the times.

That the painstaking care of American physicians just referred to was not everywhere prevalent in the year 1828 is illustrated by the experience of an English surgeon at that time. Whether the surgeon operated upon his patient without prolonged study or careful examination, or whether, as in my case, he was obliged to admit to his audience that he saw the patient for the first time, I do not know; but the *Lancet*, in its first year of publication, held him up to ridicule so severe as to excite an indignant editorial in the BOSTON MEDICAL AND SURGICAL JOURNAL, July 20, 1828. This surgeon, Brodie, had operated for stone in the bladder and found none. The following " Epitaph " was published in the *Lancet:*

> Here lies a youth; and why the youth lies here,
> Since ——— cut him for the stone is clear;
> Uncut, the youth from all disease was free;
> The stone Ben cut for is the stone you see.

The failure to find a stone in the bladder is the only reason I have for inferring that this case may have been one of the ill-studied kind. There may have been the most painstaking care and the surgeon may have based his diagnosis entirely upon a significant history, in spite of his being unable to detect with the sound a stone actually in the bladder. One of the most serious errors I have ever made in the surgery of the bladder resulted from my inability to feel a stone that was encysted in the superior wall. With positive histories I have discovered several stones that could not be detected with the sound.

Every surgeon to-day is mistaken, and frequently mistaken, as to the presence of stones in the urinary passages, especially in the kidney, even after the most exhaustive study and with the aid of the x-ray. Indeed, I have been willing in many cases to take the " field " against the diagnosis of renal stone whenever that diagnosis has been made without the *positive* and *unmistakable* confirmation of the x-ray.

The attitude of the *Lancet* in the year 1828, " the proposed object of which was medical and surgical reform," was, as I say, the subject of a very interesting editorial in the BOSTON MEDICAL AND SURGICAL JOURNAL, which it would be well to republish in every medical journal of the present day.

The efforts of the *Lancet* in those early days toward medical and surgical reform were, to say the least, strenuous and harsh. Were there to-day such a journal, the state of mind of the profession and of the public might possibly be imagined should every error in diagnosis and every evil result be made the subject of wide publication and sarcastic comment. Imagine the feelings of the surgeon were a prominent medical journal to publish such comments as the " Epitaph " just given, when, for example, no stone is found in the gall bladder, the kidney or even the urinary bladder; or should a patient unfortunately die after a difficult operation. How, under such circumstances, would he feel to have the medical journal say that " the operation of cholecystostomy by Dr. So-and-so lasted nearly an hour," and, after a few sarcastic remarks upon " one of the privileged order, a hospital surgeon," were it to introduce its description of the operation thus: " The performance of this tragedy was nearly as follows " ?

In commenting upon the description which follows of a lithotomy by a nephew of Sir Astley Cooper, the BOSTON MEDICAL AND SURGICAL JOURNAL says, " Whatever may have been the faults of the operation, or the blunders of the surgeon, no man of proper feeling can regard with anything but unqualified disgust the air of malignant triumph with which this unhappy case is dwelt upon; and the various measures taken by the students who witnessed the transaction, and by other surgeons, indicate a strong sympathy with Mr. Cooper, and a just indignation against the libeler."

But, malignant as the comments upon these two occurrences seem to-day, was the custom of showing up error, though perhaps from unworthy motives, wholly without good?

To-day it remains for the surgeon to show up his own mistakes and, in admitting insufficient research, careless diagnosis, hasty and ill-considered operations, and, most stinging of all to a tender conscience, evil results due to evil or careless methods, the practitioner but too often excites sarcastic and ungenerous comment which differs from the gross and libelous attacks of the *Lancet*, just illustrated, only in the delicate and defensible use of language.

Then the surgeon was obliged indeed to walk in the straight and narrow way. He well knew that the slightest slip meant disaster to his reputation, as well as death to his patient. Indeed, in less than a year there were in London three suits at law and a duel between medical men, wholly by the influence of the *Lancet*.

But, after all, ill-mannered and indefensible as were these methods of attack, who could doubt the vast good that would follow to-day were all medical and surgical practice under a stern and impartial control. Were the truth told, how many errors of omission and commission would be subject to just accounting. How much good would be accomplished were that control resolute and impartial, while friendly and considerate.

In a case like that of my patient with malignant prostate just referred to, though no harm resulted, but rather the benefit of accurate demonstration, how great would be the good were there an authority which under similar circumstances would call to account the surgeon who should be so careless as to neglect the most obvious and necessary examination of his patient before subjecting him even to the slight discomforts and trivial dangers of an examination under anesthesia.

After renewed observation, with the advice of my colleagues, a suprapubic cystotomy was performed at the wish of the patient and his friends. An inoperable, infiltrating cancer of the bladder was found, for which nothing could be done.

In some hospitals there are rules which forbid the performance of operations of magnitude without the consent of the staff or of a majority of the staff. In practically all hospitals with which I am connected there is no such rule. The surgeon is an autocrat, a czar, restrained in his operative zeal only by a sense of right and wrong, in the exercise of which, I must say, he is worthy only of the highest praise.

In most patients the recognition of pathology, both external and internal, is easy. A glance or a touch is enough for the diagnosis. But is the deduction of a diagnosis, even if correct, a sufficient inquiry upon the results of which to base an operation? I do not believe that it is. The case as a whole must be considered, lest in the attempted remedy of a part the whole structure be undermined and destroyed. There should be thorough research into all the *pros* and *cons* of operation; we should consider family tendencies, personal idiosyncrasies, effectiveness of resistance and repair, mental influences, environment, the patient's family responsibilities, the far-reaching effects of death or disability when wife and children are left without protection or support; in a word, there should be a rigid inquiry into all direct and indirect contingencies whenever a patient is to be subjected to any of the more serious procedures of operative surgery.

The results of incomplete study are seen in those operations which, either through incorrect diagnosis or ill-considered indications, prove their own uselessness. Errors in diagnosis are inevitable, even when the surgeon is alert and painstaking. He must always expect, therefore, to make them. Errors from insufficient study are permissible only when the need for haste is conspicuous. Ill-considered operations, which prove unsuccessful or fatal through unrecognized dangers, — diseased lungs, hearts or kidneys, hemophilia or other lethal complications, — are necessarily the result of brief and faulty inquiries. The event cannot but prove the error.

A well-considered diagnosis, upon which an operation is indicated, is usually clear and the operation seldom shows mistake. The errors of incomplete study are illustrated in many diagnoses and hence by many needless operations.

But if, upon wrong diagnoses, the surgeon is drawn into useless operations, he is, by the same influence, restrained from needful operations. For example, I have seen not a few instances of obscure abdominal symptoms carefully studied and treated as of gastric or pancreatic origin by physicians who were unfamiliar with surgical emergencies, — symptoms which were caused by strangulated hernias so small as not to form noticeable inguinal tumors. Under similar circumstances I have known rectal cancer to be overlooked by really skillful medical diagnosticians. The error has arisen from an undue prominence given to epigastric discomforts and to the omission of routine rectal examinations. How many serious, not to say fatal, cases of appendicitis have I met with that were treated as gastritis, acute or chronic. Perhaps the most frequent and fatal errors of diagnosis are found in breast tumors. Many cases of breast cancer are treated as "obstructed milk ducts," enlarged glands and the like.

I could give a tiresome if instructive list of cases which illustrate serious or fatal errors in diagnosis, and the errors are by no means always found in the practice of physicians (though naturally, being a surgeon, most mistaken diagnoses come to me from the physician), but with great frequency in the practice of the surgeon who operates uselessly upon a wrong diagnosis of his own, many times against the advice of the physician himself. The error, whether of diagnosis, prognosis or operation is, I believe, chiefly due to inadequate study and the tendency toward inadequate study, is more on the part of the surgeon, I think, than on the part of the physician, for the latter has no inviting opportunity to explore and find out.

Now what is adequate study and what inadequate study? The study of any case is inadequate when there is sufficient time for essential investigations which are not made. Study is adequate when not only the essential examinations are made, but the apparently non-essential and routine examinations. Study is inadequate when, for example, in the case of a proposed vaginal hysterectomy, a urine examination is omitted and the patient loses her chance for life through a post-operative anuria; when, as in the examples cited, failure to examine the rectum as a routine measure results in the overlooking of rectal cancer; when, in any acute or chronic abdominal case, the usual seats of hernia are not investigated. Study is inadequate when a diagnosis is wrong which time and care could hardly have failed to make right; when the patient is not given the time and thought which the surgeon would have demanded in his own case; when facts (premises) are overlooked which are essential to a correct conclusion. Finally, a case is not adequately considered when the facts are correct, but the conclusions are hasty; when, for example, in the case of a woman who has a tumor of the liver, the diagnosis is jumped at that she has an echinococcus cyst because she was born in Iceland.

It is often said that the facts are correctly observed but that the conclusion is not the logical deduction from these facts. I believe, on the contrary, that as a rule the conclusions are correctly drawn but the observations themselves are incorrect.

For example, take simple gallstones without jaundice or perceptible gall bladder, or take any other disease in which the physical examination is negative; the conclusion rests almost exclusively upon the history as given by the patient herself. Each symptom in the patient's own words must, therefore, be given its real weight in order to enable the observer to draw a correct conclusion.

It is in cases of this kind that the most frequent errors in diagnosis occur, and it is in such that the brilliancy of diagnostic gifts is shown. It means always thorough and painstaking inquiry into all the aspects of the case, both subjective and objective.

And it is not always thorough and adequate study alone that makes the correct diagnosis possible, but it is the experience based upon thousands of demonstrations of the truth or the fallacy of the diagnosis. Finally, added to study and experience, there is a certain inexplicable intuition which makes at last the brilliant diagnostician.

The influence of careful study is illustrated in the development of our knowledge of acute pancreatitis. When Fitz, soon after his classical monograph on "Acute Hemorrhagic Pancreatitis"[1] made the correct diagnosis in the case of a prominent citizen of Boston, the medical and surgical community applauded the brilliancy of that intellectual feat. That diagnosis was the result of pathological observations in connection with a study of the clinical history; it was the fruit of years of observation in which there had been a direct and early demonstration of the pathology of this disease. Indeed, the sequence of symptoms and their connection with living pathology has shown us how to estimate their weight. The result is that in this disease it is now the rule rather than the exception to make a prediction of existing pathology which operation shows to be correct.

But the tendency of the times is toward hasty diagnosis. Not that haste is not in many cases preferable to delay when seconds are important; but haste is incompatible with thoroughness and accuracy when accuracy is the essential thing for success. A hasty opinion, which in an emergency leads the surgeon almost always toward a crying lesion, is better than a slow but well-considered opinion which always leads to accurate diagnosis, for in the former instance the remedy will be in time; in the latter, it will but too often prove too late.

The physician, when he is inclined toward the radicalism of mechanical treatment, often outradicals the surgeon. I know of no class of professional men who are more inclined toward surgery in hopeless surgical cases than certain strictly medical men. This tendency toward radicalism is not, of course, an attribute peculiar to medical men; it is rather one of men in general who are alert and who appreciate the wisdom of timeliness and the value of thoroughness. The determination to get at and to remove the cause of suffering is a commendable one, and, between certain limits, is to be encouraged. But no tendency in medicine needs greater restraint, and no restraint is more effective than that of experience.

Not long ago, in the case of an obscure swelling of the whole right lower extremity, it was proposed by the physician to cut down upon the femoral vein and remove the thrombus. This proposition was made, not to the surgeon, but to the patient, who naturally was much disturbed when I not only declined to carry out this proposed operation, but strongly advised the young man against it.

It seemed to me a suggestion which, however natural, and, by theory at least, however effective, had nothing whatever in common-sense practice, experience or experimentation to commend it. This tendency toward operative measures in lesions which medical measures fail to reach is to be encouraged, but it must at the same time be restrained within reasonable limits, first, for the sake of the patient, and secondly, for the sake of medical and surgical art.

Far be it from one who has lived through the wonderful advances of medical and surgical science to stand in the way of its further progress. I realize fully that the great advance in surgery has been made in spite of opposition of the most bitter and, as it seems now, unreasonable kind.

Any new idea that turns upside down all our previous ideas, based as they are upon experience. cannot but excite doubt and opposition. The surgery of the blood vessels is so new in many of its propositions, so contrary to experience, that it would be indeed strange if such an operation as that suggested for right-sided swelling of the lower extremity did not excite some doubt at least of the wisdom of its application. In this case I doubted also the diagnosis of obstructive phlebitis.

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[1] Acute Pancreatitis: A Consideration of Pancreatic Hemorrhage, Hemorrhagic, Suppurative and Gangrenous Pancreatitis, and of Disseminated Fat Necrosis. Middleton-Goldsmith Lecture, 1889. Feb. 16, 1889.

But is not the opposition which I cannot but feel to the application of any principle of operative treatment to a thrombosed femoral or iliac vein as essential to wise and sure progress as the opposition of a strong minority is to proposed radical legislative action? Would progress be as safe and as sure and satisfactory in medicine and in surgery were it not that every tendency whether towards radicalism or towards conservatism is met by a vigorous opposition?

Supposing, for instance, that the example of McDowell had met with no opposition whatever; that progress in abdominal surgery had been on all sides encouraged; that every man who had heard of his brilliant ovariotomy had operated without restraining influence of a conservative public opinion, would not an awful mortality have set back for a hundred years the magnificent progress of modern ovarian surgery?

The careless diagnosis, from one point of view, is in many cases quite as satisfactory to the one most concerned, the patient, as the refined and painstaking one.

Indeed, a positive opinion, whether based upon ignorance and carelessness or not, is to many patients, as we all have observed, more satisfactory than a doubtful one, even when based upon experience, knowledge and diligent study. Who has not been discouraged by the failure of patients to return for the efficient study of their disease? My record books are filled with histories incompleted from this cause. The patient, by no means necessarily uneducated and unintelligent, expects to be told on the spot exactly what the trouble is. She is perhaps indignant that her disease, or lack of it, is not immediately detected, and remains dissatisfied until a positive opinion is given, based perhaps upon a word of history and a glance.

I admit the feeling of discouragement which such an occurrence cannot but cause and the influence toward snap-diagnosis methods which it incites.

The thorough study of a patient upon whom it may be proposed to operate, say for some intra-abdominal condition, demands a careful history and a painstaking physical examination. If the examiner wishes to be exceptionally careful, it means that he repeat his history by reading it to the patient; that he cross-examine her upon this history, and test in every way the truth of it, uninfluenced by her desire, like that of the witness in court, to help matters by eager assents to leading questions, assents which too often lead him astray; and finally, that he make a thorough examination of all again, in detail, which may directly or indirectly be concerned in the diagnosis.

One of the narrowest escapes that I have ever had from unnecessary and worse than useless exploration was in the case of a supposed general peritonitis. There was distention, rigidity, constipation, but no fever. The diagnosis seemed sure and the prognosis grave. I realized, fortunately, in time to avoid operation, that it was a case of acute lead poisoning. The incident occurred in the town of Milton, where there had been many cases.

In three cases (all of the patients were men, two of them physicians) I have been consulted for suspected gall-bladder infection in which the acute and severe pain was that of a *herpes zoster*. In another patient the suspected gastric ulcer was a *tabes dorsalis*. In a grave emergency demanding operation, exploration showed an acute dilatation of a stomach displaced to the pelvis, instead of the ovarian tumor with twisted pedicle which I had diagnosticated.

Another tendency which, indeed, has done more than anything else to make diagnoses slipshod and inaccurate is that toward the operative diagnosis. But when so quick and so accurate a method of finding out the truth is at hand, why, indeed, should the physician spend time, often valuable and sometimes essential for successful remedy, in making a diagnosis which at best has elements of uncertainty about it. We have only to admit candidly our experience to realize that many a life has been lost by relying too firmly upon the non-operative diagnosis. Were all operations recorded which were unsuccessful because of wrong early diagnosis, or a correct but delayed one, we should have a list of fatalities dreadful to contemplate. The deaths from acute appendicitis to-day are the result of delayed recognition rather than of ineffective remedies.

The evil results in other less frequent abdominal emergencies are owing to the same cause, a cause which early exploration would have revealed in time.

The mortality in gall-bladder surgery, perhaps the best illustration of all the abdominal lesions, is almost universally due to the prolonged changes which unrecognized gallstone disease has brought about while the patient has been treated for other things.

But, admitting unreservedly the strength of this line of argument, does it follow that in all cases the operative demonstration of the exact facts is essential? Are we so poor in experience and so inaccurate in deduction that we cannot make a diagnosis positive enough to ward from the unfortunate patient the additional misfortune of an unnecessary operation?

True, in many a hopeless case, the decision that no operation is justified adds a poignant suffering which would, by operation, be replaced with hope. I have recently been influenced in a doubtful case toward making an attempt to extirpate an ileocecal cancer by the despair which I know would follow my declining to interfere.

In most cases, however, in which the prognosis of hopelessness is made, the decision not to operate is received with great satisfaction, unless it is explained to the patient that non-intervention is because of hopelessness.

Upon these arguments, the force of which I freely admit, the exploratory diagnosis wholly rests.

The resort to operative diagnosis, except for these reasons, is an evil tendency.

The first and most important objection that I have to raise against the operative diagnosis is that it discourages the older methods of painstaking histories, thorough physical examinations and logical deductions.

I have had occasion several times to speak of diagnosis as an intellectual process.

"Diagnosis before operation, controlled by operation and by laboratory investigation, cultivated by assiduous study before and after operation, corrected by errors and stimulated by successes, affords the most valuable and most refreshing means of high intellectual effort which the medical profession affords.

"The successful application of the principles and methods of diagnosis in obscure medical and surgical cases is the result of keen mental processes accurately employed. For success in diagnosis and in treatment, especially when time presses, one must keep his wits about him and the mental act must proceed with swiftness and precision. We must be wide awake." [2]

Based upon abundant experience, an opinion logically deduced from history and physical examination is usually so reliable that the patient's life and health, as well as the surgeon's reputation, may be trusted to it.

An opinion thus carefully formed, that a certain patient has a simple dyspepsia and not gallstones or cancer or chronic pancreatitis or appendicitis, is an adequate reason for non-intervention, and the surgeon who explores the abdomen in the face of an adverse opinion formed by men of abundant experience is subjecting his patient to an unjustifiable risk, the true extent of which will be appreciated only when, as sooner or later will happen, a fatal result ensues.

For example, a young man about to be married I saw and heard cursing with his dying breath the surgeon who had explored his kidney for stone and found nothing. In this case there was thorough study and the surgeon was a man of skill. The dangers had been carefully considered. But the result was nevertheless disastrous. How much more distressing would be such a case in which there had been haste in diagnosis, carelessness in indications and want of skill in operation.

Operative diagnosis tends to carelessness in histories, to looseness in the putting together of facts and consequently to erroneous conclusions.

But it will be said, "Why make bedside diagnoses when operative diagnoses are always accurate?"

Because the patient will be subjected in many cases to a perfectly useless operation, or to a fatal one, as in the kidney exploration just mentioned. Let the exploratory operation remain, as it has been and should be, the "court of final decision" in the doubtful case, but let it not be the "court of first resort" unless doubt and delay mean probable death.

As I write, illustrative cases come up in which the decision is indeed hard to make.

A tumor of the pylorus, diagnosticated as cancer, was resected by an experienced surgeon upon the diagnosis of a skillful physician. The *pros* and *cons* were carefully studied and operation undertaken upon a painstaking diagnosis. The patient died soon after the operation of complete resection. The laboratory diagnosis was chronic ulcer. Would the diagnosis of gastric ulcer have justified this operation? Ought it not to have been made? The operation was in the hands of an advocate of the operating-table diagnosis.

A similar experience occurred to me some years ago. The diagnosis of pyloric cancer had been made by a skillful medical man. I concurred in the diagnosis before operation and verified it to my complete satisfaction by the gross appearances and feel of the pyloric tumor. Resection was, after a few days of promising convalescence, fatal. The tumor proved to be the thickened scar of an old gastric ulcer. One or two interesting comments on these occurrences suggest themselves, based upon the needlessness of radical excision, as shown by the autopsy.

Are we to admit in such cases first, not only our powerlessness to make the diagnosis and save the patient from so formidable an operation as extensive gastric resection, but secondly, our inability to tell with reasonable certainty the nature of a tumor which is in our hands, in the full light of day?

(To be continued.)

THE COMPARATIVE VALUE OF CHANGE OF CLIMATE AND OF TREATMENT IN SANATORIA NEAR AT HAND IN CASES OF PULMONARY TUBERCULOSIS.*

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BEFORE entering upon any discussion of the relative value of change of climate and of treatment in sanatoria near home in the cure of pulmonary tuberculosis, it is desirable to have a clear understanding of the principles of that cure, and a common definition of terms.

The arrest of a pulmonary tuberculosis is brought about through the tissue and physiologic resistance to the tubercle bacillus and its products.

At present our means of curing the disease are only those which perfect, maintain, increase or exalt this resistance.

The essentials to this cure are: (1) an outdoor life in pure air and sunshine; (2) abundant nutrition; (3) rest.

An outdoor life does not mean the casual or occasional being out of doors, but implies a constant life in the open air. The measure of its efficiency is directly in proportion to the number of hours spent daily in the free air. It is not simply the being out of doors for recreation, but it is the spending of the patient's entire time, so far as possible, in fresh, open air, not only while at work or exercise, but while at rest, and particularly during the period of sleep.

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[2] On the Significance of Clinical Histories before and after Operative Demonstration of the Real Lesion. BOSTON MED. AND SURG. JOUR., vol. clviii, no. 15, p. 469.

* Read at a Symposium before the International Congress on Tuberculosis at Washington, D. C., Sept. 29, 1908.

By abundant nutrition is meant the fullest attainable measure of accomplished nutrition. This does not consist, as is too often supposed, if we may judge from dietaries recommended, in the ingestion of inordinate amounts of food, but in the maximum of digested, absorbed and utilized nutriment. To its accomplishment, therefore, every attention to the patient's metabolic processes is important. The amount and character of his food must be controlled, and a careful watch kept of his digestive processes, that they be kept at maximum efficiency, fully utilized, but never overtaxed. The fullest oversight of his elimination, through bowels, kidneys and skin, is essential. While abundance of food is important, it is the physician's duty to see that this abundance is made physiologically active.

The importance of rest cannot be overestimated, but it must be always considered in respect to the tissue demands and physiologic state of the individual patient. It is a relative term and will vary, therefore, from confinement in bed over long periods to such graded and controlled exercise as may finally approach to full measure of work. Under the heading of rest may be included not simply the regulation of muscular exercise, but the control and supervision of intellectual and emotional activity, factors of far-reaching effect upon the circulatory and nervous balance of the patient. The clinically experienced phthisiologist needs no warning upon this point; but in actual practice this aspect of the question of rest is too often neglected. In the mental and moral realm there is the same need as in the muscular for a judicious grading from idleness to full activity.

At the present time all other measures are but adjuvants to these three factors — useful in different degrees, but not replacing them. Various remedies may assist in bringing about the desired gain through improving appetite, digestion, absorption and elimination; or securing rest by allaying pain and cough, or equalizing the expenditure of circulatory and nervous energy. As such they may in special cases be of paramount importance, but they are not fundamental.

The serums and tuberculins, useful as they are in selected cases, and promising as their future now seems, must still be considered as experimental and subsidiary to the other measures mentioned. Their present position in our armamentarium will be presented to you by others in this symposium.

Finally, close and prolonged medical supervision is also essential to insure the patient's gaining the maximum benefit from, and due proportion of, these factors of outdoor life, food and rest.

While every case of pulmonary tuberculosis should be given the full measure of all of these, it does not follow that there is equal need of each. One patient will be in far greater degree helped by securing the proper rest, his nutritive life having been well balanced previously; while another will stand in urgent want of food, or be wholly untrained to any appreciation of the use of fresh air.

It is in securing this closer watch and control of the patient's minute needs that sanatoria have been so useful and have accomplished so much, not only for their patients' good, but towards our better understanding of the natural history of the disease and its proper management. In the interest and attention given during the last few years to the problem of tuberculosis more confusion has arisen as to the benefits derived from sanatorium treatment. The undoubted gains reported from institutions in one city have been contrasted with statistics of patients sent away to a different climate, and arguments drawn in favor of or adverse to the one or the other. The place of the sanatorium in the care of the tuberculous will be the subject of another speaker to-day, and I shall not enter upon its consideration. For the present discussion, it is important to bear in mind the unreliability of statistics to settle such a dispute by reason of the varying and often incomparable factors composing the data, together with the well-known fact of the spontaneous healing of pulmonary tuberculosis. This difficulty has been most fully and excellently discussed by Dr. Bulstrode in his report, "On Sanatoria for Consumption and Certain Other Aspects of the Tuberculosis Question." Thirty-Fifth Annual Report of the Local Government Board, 1905–06. London, 1908.

If it is difficult, as he shows, to settle by statistics the value of sanatoria, it is even more difficult, by any such means, to decide between the advantages of change of climate and of care in a sanatorium at home. Indeed, upon such a statement of the problem there can be no decision. We must be sure we compare only factors which are comparable. To study the value of change of climate for a patient with pulmonary tuberculosis, we must give our attention to that factor alone and compare its influence only upon patients placed under similar conditions of nutrition and of medical supervision in the two places. If we are to judge of its relative advantage, we must compare only patients *in sanatoria* in changed and in home climates, or patients in ordinary houses under limited observation at home with patients similarly situated, but with a change of climate.

As the purpose of this section and especially of this symposium is to consider the clinical not the sociologic aspects of the question, I shall assume that the problem for solution is that of the individual patient. Indeed, it is always thus that it presents itself to us as physicians, "What is the best advice to give *this* patient?" "Shall we recommend him to stay at home under proper supervision, or urge him to seek such supervision at once under changed conditions of climate?" The question, therefore, resolves itself into this: Will the patient obtain the essentials for his cure better at home, or by change of climate, and in what way may we expect a change of climate to influence these essentials?

Climate is the sum total of the meteorologic conditions prevailing in a given region over considerable periods of time. It is the *average* condition of the meteorologic phenomena characterizing that place. The weather is the immediate state of those phenomena at a given time. It is important to have this distinction clearly in mind. The weather may be very bad,— cold and windy, for example,— on a given day, in a place where the average and usual conditions forming the climate are those of warm and sunny days; and even the region of generally damp and cold climate may have its warm dry days of beautiful weather. *Climate* is the sum total, the average state, of the weather to be expected in a given region or place over a considerable period of time.

Every patient, therefore, wherever he dwells, lives in a climate of some kind. It is absurd to speak of the climatic treatment of tuberculosis as contrasted with the sanatorium treatment, for climate is not something which we may use or not in a given case, as we might a drug or serum. The climate has to be considered in every case; it cannot be avoided, for it is the average prevailing state of the weather, the temperature, the sunshine, the humidity, the precipitation, the wind, amid which the patient is living. Even if we decide to keep him at home, we thereby select a climate for him.

The problem, then, is whether these prevailing atmospheric conditions are such as best conduce to maintain or increase his powers of resistance to the tubercular invasion. The essentials to this end we have seen to be an outdoor life, food and rest. The latter two of these depend for their full establishment upon the financial ability of the patient, and the judgment, skill and dominance of his physician. So far as the question of nutrition is concerned, it is affected only indirectly by the meteorologic conditions, according as these make greater or less demands upon tissue metabolism for heat production, and stimulate or diminish the appetite. It is the first of the three essentials, then, — the outdoor life, — which is most directly and to the greatest degree affected by the climate.

It being important for the cure of a patient suffering from a manifest or incipient tuberculosis that he lead a continuous outdoor life, it follows directly that there must be an advantage to such a patient in placing him as promptly as possible in a region where he can most constantly, most agreeably and with the fewest difficulties lead that life.

As the process of healing of a tubercular lesion is necessarily slow, and the establishment of a permanent recovery must take a period measured not by days, but by months, during which time the patient should live out of doors, it is not the occasional pleasant day which counts, but the probability of such days prevailing over the long period necessary for the cure.

A patient can, of course, be kept out of doors in any weather, and pure air is the same everywhere, but in the actual management of a patient's life it is not the merely possible, but the practically feasible, which concerns us most.

The character of the weather from day to day has a great influence upon the ease and safety with which an invalid can spend his time out of doors. It has perhaps even more influence upon the readiness with which he yields to that outdoor régime, enticing him in the one case, necessitating his being driven out in the other.

The temperature of the air, for instance, may in one place range so low as to necessitate so great an amount of clothing as to be a burden to the patient. In another place the temperature may be so high as to be oppressive, diminishing the appetite and preventing such exercise as is desirable, or even any outdoor living during considerable portions of the day. A change from such a region to a cool, breezy climate needs no argument to prove its advantage in securing the desirable results of outdoor living.

The degree of actual and relative humidity affects the patient's sensation of the temperature and his endurance of the heat or cold.

The advantage of sunlight and its effect upon the pleasure of the patient's outdoor life are also too obvious to need discussion. The duration of sunshine, the percentage of the total possible which is actually realized in any place, is a matter of no small importance to an invalid, especially if he is obliged to be inactive during the cold of winter days. In one region there may be, out of a hundred consecutive days, an average of only twenty which are clear, while in another, during the same period, there may be less than twenty which are cloudy.

It is not so easy for a patient to live out of doors, either at rest or in activity, even though the air he breathes be equally clear, in a place where fog and rain are frequent or semi-constant, as in one where week after week goes by without a cloud or drop of rain.

And so we might take up in turn each of the meteorologic phenomena which are factors in the sum total of climate. I have said enough, however, to indicate the bearing which they must in general have upon the problem we are considering.

Not only the occurrence of days pleasant and suitable for easy outdoor living, without tax upon the patient's vitality, but the frequency, the continuousness of such days, the regularity of the diurnal variations, the probability and degree of sudden changes of these meteorologic conditions, are matters of direct importance to the person who is expecting to lead a long-continued outdoor life. The physician who is mapping out such a life for a patient should know the climatic conditions under which he is living, and determine if it is possible to better them in any way. When we take a patient from a dark, unventilated closet in a tenement alley, and put him in a day-camp in the grounds of the municipal hospital in his own city, we change for the better the conditions of the air, sunshine and temperature under which he is living. We have improved these conditions for him, perhaps, relatively more than we do for his rich fellow-citizens, in sending the latter from his palatial home to a distant state. We have placed each, however, where his opportunity for outdoor life in fresh air and sunshine is better than it was before.

Every patient should be placed where the climatic conditions most favor his leading the proper outdoor life. If these conditions are found to a greater degree or in a more constant measure in another region than that in which he has been living, he should be advised to go to that place to live,— to change his climate. He moves into the better climate as one moves from a damp, ill-ventilated house to a sunny, well-drained one.

So far we have considered change of climate only as affecting the outdoor life. The outdoor life, however, is but one of the three essentials for the cure of a patient with pulmonary tuberculosis. The physician's oversight extends to the other two as well, and his duty, to securing the due and fullest measure of each. A change of climate should be urged, therefore, only when it can be made without a more than corresponding loss in the way of nutritious food and rest. There is no gain to a patient in placing him in the most ideal of climates if it require that he be sent to a place where he cannot secure proper food and the other conditions of right living. Any possible gain from the one factor is more than offset by the loss in the other two. It is manifestly bad therapeutic generalship to send a patient away from home, even to the best of climates, without the means to secure proper or necessary food, to say nothing of the hyperalimentation often desirable. A patient who at home might have abundance of food, and, though idle, continue to have it by reason of family assistance, may not, away from home, be able to command that aid in the form of money. To earn this by his own exertion demands work often at a time when labor is impossible or most detrimental. Either the factor of food or rest suffers. Not only the amount of food, but its character, must be considered. A residence, for example, in a warm, dry climate loses much of its therapeutic value to a patient who may require a largely proteid diet, if it be in a region where ice is wanting and fresh meat difficult to secure or keep. The problem of nutrition, as we have seen, goes deeper than the mere question of food supply. The change of climate may, by reason of altered conditions of temperature, sunshine, dryness, barometric pressure, prove beneficial to one patient, stimulating his nutritive activity in the way of appetite, digestion and metabolism. It may be unavailing to another patient because of some factor unsuited to his condition, which so disturbs the physiologic balance necessary to nutrition as to offset the other advantages of outdoor life.

The factor of rest must be considered in determining the relative advantage of change of climate. As in one case, the problem of nutrition is more pressing than that of increased facility for outdoor life, so in another the question of rest may, for the time, be the dominant one. I have spoken of the disadvantage from a patient's trying to better his climate at the cost of having to work when unfitted for labor. On the other hand, a patient whose condition warrants labor, or whose social and financial circumstances are such that he is obliged to work, will find often that the gain from a better, milder climate will enable him to continue at his occupation as he could not under the old and less favorable conditions of prevailing weather. Such details are corollary to the question of change of climate. They do not affect the principle involved, but are of great practical importance in the individual case.

Closely related to the question of nutrition and rest is that of proper, skilled, medical supervision of the patient's life. The exceedingly elastic meaning which we must give to the term "rest" necessitates such competent medical control of the patient, wherever he may be. In determining, therefore, upon a change of climate, it is important to know whether in the new region of better outdoor facilities the patient can have the same degree of skilled advice as he could at home, and equally important to impress upon his mind the necessity for such control in the new abode. Patients too often act as if they had been taught that the change to a better climate constituted the whole cure. It only offers a better opportunity to work out that cure.

Finally, the mental and moral influences of a change of climate must be considered. The change of scene and surroundings often involved in securing a change of climate may have a most beneficial effect by stimulating interest in life, renewing hope of recovery, enthusing devotion to the necessary routine of the cure. If so, it strengthens the direct physical and physiologic influences by the subtler, but no less real, psychical and moral forces. The separation from home and friends, which in one case may prove a beneficial rest from domestic cares and the ill-judged attentions of a solicitous family, may with another patient be so fraught with distress, worry or homesickness as to be a bar to improvement. The sunniest skies smile not to the homesick. The removal of restraint from home surroundings may in still another case result in a license which proves disastrous to the patient's recovery.

I have purposely refrained from any discussion of the relative advantages of special types of climate, such as marine or mountain, and of the specific influence which the component factors of a climate may have upon the recovery from pulmonary tuberculosis. If by reason of experience or the acceptance of results of physiologic experiment one believes that any of these factors are particularly and directly beneficial to the cure of pulmonary tuberculosis, then it is his duty to place his patient in a climate which, as far as possible, embodies that special character, while fulfilling the principal indications for outdoor life.

CONCLUSIONS.

An outdoor life is one of the essential aids to the cure of pulmonary tuberculosis.

The climate surroundings of the patient have to be considered. Consciously or unconsciously we select a climate for every patient, even when we keep him at home.

That climate is most favorable which most readily permits an outdoor life.

A change of climate will be of advantage to a patient if we can thereby place him under meteorologic conditions which, to a greater degree than before, and more constantly, permit him to lead the necessary outdoor life with ease, safety and economy of vital expenditure.

The accompanying change of scene and surroundings may be expected to act advantageously in an indirect way.

In making any proposed change of climate attention must be given to the facilities in the new region for obtaining suitable food, accommodation, care and medical supervision.

If these conditions can be as well met as at home in a better climate, the patient should be advised to make the change.

If the patient's financial, social or domestic circumstances are such that he cannot in the new climate secure proper and sufficient food, accommodation, care and medical attention, or if his mental attitude is such as to make separation from home inadvisable, he should not be sent away.

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SPORADIC TRICHINOSIS, WITH REPORT OF A CASE.

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The disease trichinosis is one of the maladies, originating from animal parasites, which was first recognized during the past century. It is produced by the embryos of the trichina spiralis, which are deposited in the intestinal villi's lymph spaces by the adult females. The embryos are then transported by the lymph into the mesenteric lymph nodes and, later, into the thoracic duct. By means of the thoracic duct they find their way into the superior vena cava and from thence are carried into the heart. Subsequently they are brought by the blood to their most frequent permanent habitat, the muscles, where they become encysted and form encapsulated larvæ.

Until 1860 these muscle trichinæ were deemed to be of no pathological significance, although they had been frequently found in the human muscle, having been first observed in this situation by Tiedemann [1] in 1822 and Hilton [2] ten years later. Owen [3] and Wood [4] described them in 1835, and the former investigator drew them for his article and gave them their present designation. In 1860 Zenker [5] performed an autopsy upon a girl, aged twenty years, who had been ill at the Dresden Hospital for about two weeks. Her chief symptoms, at first, had been debility, sleeplessness, loss of appetite, constipation, fever and thirst. Subsequently she had complained of extreme pain in all the muscles, especially those of the lower extremity. The pain was present both night and day. Then edema of the legs developed, and later pneumonia appeared, which caused her death in a few days. Although the spleen was not enlarged and no rose spots were detected, yet from the distended abdomen, the intense fever and the above symptoms, the diagnosis of typhoid was made. At the autopsy Zenker found the muscles swarming with trichinæ, and demonstrated the presence of living adult trichinæ in the intestines. These findings led him to investigate the flesh of the animal, a portion of which the patient had eaten thirty-seven days earlier. In it he found, without any difficulty, muscle trichinæ, and thus the importance of this parasite as a pathogenic factor became apparent. The method of infection was by the ingestion of raw or incompletely cooked trichinous meat from the hog which, when carried to the intestines, was freed of its embryos, the surrounding capsules having been dissolved by the stomach juices. In the intestines these embryos develop into the mature worm. The male worm soon dies, but the female survives to produce from 200 (Virchow) to 1,200 to 1,500 (Rupprecht and Leuckart) embryos, which are passed into the lymph and subsequently distributed to different parts of the body.

The embryo's mode of entrance into the muscle fibers is unknown in man, for the earliest muscle changes recorded were noted in the second week by Lorenz,[6] the third week by Tungel [7] and Ehrhardt,[8] and the fourth week by Lewin,[9] Soudakewitsch [10] and Frothingham,[11] while the embryos, according to animal experiments, enter the muscles about the eighth day after the onset of the infection. At first the embryos, measuring about 0.1 mm. in length, are seen stretched out in a muscle fiber. Gradually, as they grow, they become twisted and assume a spiral arrangement, ten weeks being required for their full development. During the growth of the embryo, degenerative changes in the involved muscle fibers are noted, as evinced by an increase in the muscle nuclei by direct division and a disintegration of the muscle protoplasm into a finely granular mass. According to Lorenz,[12] some of this disintegrated protoplasm goes to form the inner portion of the capsule, which is seen surrounding the trichinæ at about the eighth week, while the outer portion is formed from the sarcolemma sheath. The trichinous fiber soon becomes spindle shaped and finally contracts, the poles being closed by the activity of the muscle nuclei. In this way most observers state the encapsulated larvæ are produced. Recently Frothingham has disputed these findings, in a careful investigation, and has shown that the capsule is entirely made up of connective tissue. His case is, also, of interest as he demonstrated by it the position of the trichinous embryos in the lymph glands and showed them in the blood stream for the first time in man. He, also, proved that the embryos could break out of the vessels in the liver, pancreas and brain and cause local destruction of tissue. The invaded as well as the uninvaded muscles show inflammatory foci of round-cell infiltration at about the third or fourth week, which persists until the eighth week. These foci are due to the proliferation of the cells of the sarcolemma sheath as well as of those of the interstitial tissue and the capillaries. At about the fourteenth day eosinophile cells are quite numerous in these foci, but they were not found earlier by Graham [13] in his experimental researches upon rats, and were wanting in Lorenz's case of the second week.[14] Vacuolic degeneration of the muscle may also be present, and hyaline and waxy degenerations have been described. Eventually the interstitial process subsides and some of the round cells are absorbed, while others form scar tissue. The other pathogenic changes consist in an acute intestinal catarrh with glandular swelling, parenchymatous degeneration of the liver, heart and kidneys, and a catarrhal inflammation of the lungs, with an occasional embolic condition. As encapsuled larvæ the trichinæ may live from twenty to thirty years, but long before this time many are absorbed and disappear. Frequently, after about a year, some calcification of the capsule is observed. Langerhans [15] and Lorenz [16] have especially described the degenerative changes noted in the trichinæ, along with the calcification or non-calcification of their surrounding capsules.

In this country the disease is found chiefly in the isolated or sporadic cases, although Persons [17] and a few others have described epidemic cases. The initial symptoms are limited to the gastro-intestinal tract and, in severe instances, consist of a profuse diarrhea, accompanied by violent attacks of vomiting. In the less severe cases these symptoms are absent, but nausea, loss of appetite and pains in the abdomen, with or without constipation, are complained of, while the lighest cases show slight or no signs of gastro-intestinal disturbance. About eight days after the onset of the disease, when the parasites begin their migration into the muscles, pains of a rheumatoid nature appear, which are situated in the muscles and are, at first, very slight. Gradually they increase in severity and are not only spontaneous in origin, but are aroused by active or passive motion. Finally they become almost unbearable. Walking is no longer possible and the patients are confined to bed, with their bodies flexed so as to decrease as much as possible the state of tension of the affected muscles. The pains are described as dragging in character. The muscles seem swollen and, on palpation, appear tense and of a consistency like rubber. They are entremely sensitive to pressure. Cohnheim [18] thought the body muscles were most apt to be implicated, but subsequent investigation has not borne this out. Indeed, the flexor muscles of the upper extremity, especially the pectorals and the bicipital muscles, appear most markedly involved.

The involvement of the muscles varies widely, and, consequently, cause the symptoms to differ. If the intercostal and diaphragmatic muscles are not concerned, then the spontaneous pain, by rest, is much relieved and becomes moderate. If they are implicated, the dyspnea is extreme, especially in the severe cases, where respiration becomes practically impossible. In these cases death results from respiratory paralysis in the fourth to sixth week. Death, however, may ensue earlier, if the muscles of the tongue and larynx, as well as of mastication and deglutition, are much affected. Hoarseness is the outcome of the spread of the inflammation to the laryngeal muscles and is a noteworthy and fairly constant symptom. With the subsidence of the inflammation in the muscles, about the third or fourth week, an edema of the extremities is noted, which is not of long duration. The muscles, then, show a decided atrophy, but, eventually, are restored to their normal appearance. The convalescence may last several months. It is complete when the trichinæ are encapsulated.

Fever is noted early. It is likely to be of the remittent type, but gradually becomes intermittent and ends generally by lysis after three or four weeks, though, in some instances, it is prolonged about a month longer. With the fever profuse sweats may appear, which often are a very troublesome symptom. They may be followed by an uncontrollable feeling of thirst. The pulse is frequently quite rapid when the fever is at its height.

One of the most characteristic and constant features of the disease is the edema of the face. It is often the first general symptom observed and usually is limited to the eyelids, but may extend to the forehead and cheeks. Its duration is generally but for a few days. It may last, however, throughout the second week. With the edema an exanthem usually is seen, although it is a less constant symptom. It may vary greatly in character, being, in different cases, a pseudo-erysipelas, an urticaria, an herpetic, papular or vesicular eruption. Occasionally it resembles miliaria, with pustular or furuncular formation, from which trichinæ may be emptied.

Blood examinations furnish us interesting diagnostic data, for, besides the usual presence of a leucocytosis, there is, in the acute cases, on differential count, an increase in the number of eosinophiles. This was not recognized until March 5, 1897, when Brown,[19] of Baltimore, found an eosinophilia of 37% in a patient at the Johns Hopkins Hospital, who had been admitted two days previously complaining of general muscular pains. Trichinæ were later found in his excised muscle. Subsequently two other cases were observed by Brown, which are detailed in his careful and thorough study of the blood in this disease. In all of the patients the eosinophiles were much increased in percentage over the varieties of the other white blood corpuscles, the first case showing as high a percentage as 68.2% seven weeks after his entrance into the hospital. The clinical features of this case, as well as those of four others, Dr. Osler described in an article published in 1899.[20] In it he states that after the discovery of an eosinophilia in the first patient, such a finding in the others led to a diagnosis of their affection. Thus the importance of this aid to diagnosis becomes apparent. It has been, at times, of the utmost assistance in the proper differentiation of a case of trichinosis presenting obscure symptoms.

Since Brown's work, about 100 cases have been published which have confirmed his blood findings. Some of the cases, however, such as those described by Howard,[21] Da Costa[22] and Schleipp,[23] have shown no eosinophilia, but these may be classified as chronic cases or acute ones of a very mild type. The eosinophilia generally shows a gradual fall at the beginning of convalescence, but Schleipp has found it persisted in fifteen convalescent patients, in one case being as high as 45.2%. It must be understood, however, that the presence of an eosinophilia is not pathognomonic of trichinosis, for it is seen in a variety of skin diseases, bronchial asthma, the affections caused by intestinal parasites and, less pronouncedly, in other maladies. Brown,[24] for example, relates an eosinophilia of 24% in chronic eczema, 22.1% in bronchial asthma and 27.9% in anchylostomiasis, while Coe, in the "Blood Findings in a Series of Skin Diseases,"[25] mentioned an eosinophilia of 51.8% in pemphigus, 21% in psoriasis and 20% in dermatitis herpetiformis. In 1905 Meyer[26] wrote an interesting pamphlet on "*Die klinische Bedeutung der Eosinophilie*," in which he considers the subject in great detail.

Albuminuria is a frequent symptom, especially in the severe cases, and a great increase in the urates is of common occurrence. The urine in three of the cases Dr. Osler reported gave typical diazo-reactions. In some of the fatal cases, lung infarcts and pneumonia have been described.

The diagnosis is sometimes quite difficult, but, by taking a strict cognizance of the clinical features of the case in question, may, generally, be readily made. The presence of an eosinophilia, in addition to slight muscular soreness, should be sufficient to cause a bit of muscle to be excised and examined for trichinæ. Indeed, such was the reason for excising a piece of muscle in the case we report. For, in this instance, as well as in others, where sporadic cases are observed, the symptoms may be extremely slight. However, when edema of the eyelids is present, with hoarseness, slight difficulty in swallowing, soreness on mastication, general muscular pain and a sensitiveness to pressure of the muscles, these symptoms may be considered pathognomonic. The presence of gastro-intestinal symptoms with the finding of trichinæ on the excised muscle and occasionally in the stools will readily differentiate the disease from the other non-suppurative myositides, while the suppurative varieties may be distinguished by their having suppurative foci of infection in the muscles. There is yet one disease, typhoid fever, which has been confused quite frequently with trichinosis, as well as associated with it on two occasions. For Fischer[27] and McCrea[28] have both reported instances of the combination of both diseases. In Fischer's case the clinical features resembled typhoid, and trichinosis was only accidentally discovered. In the second patient the edema of the eyes, the eosinophilia and the history of the ingestion of raw sausages every week and raw ham occasionally pointed to the additional presence of trichinosis, but the parasites were not found until two pieces of muscle had been excised for examination. When the two affections are not combined a differential count will give important aid. A Widal reaction is, also, of the utmost assistance. The use of purgatives is indicated if the patients are seen within two days after they have eaten infected meat. Later, rest and symptomatic treatment are best employed.

The following case, Bianchi A., aged twenty-three (Hospital No. 41,246), was admitted to the Hartford Hospital, Sept. 4, 1906, on the service of Dr. William Porter, Jr., complaining of pain in his legs. His family and past history were negative. He had been working with a gang of Italians on a road near Collinsville. The laborers were huddled together in huts, but none of them, according to the patient's statement, had had a similar disease. He also gave no history of having eaten raw sausage, ham or any meat from the hog, but he was an Italian with a most imperfect knowledge of English, and it was difficult to get him to understand our questions.

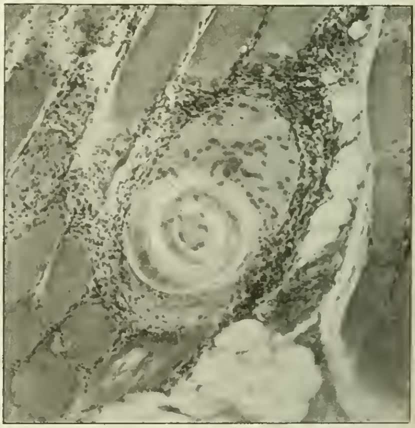
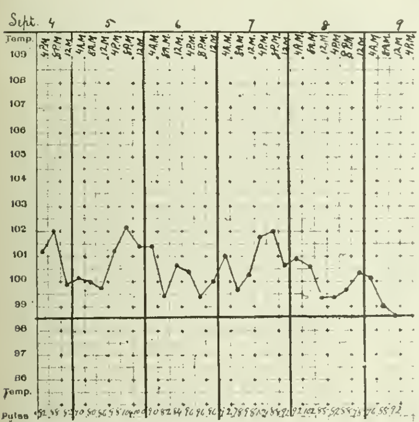


FIG. 1. X 200. Objective 16 mm. Compensating projection: Ocular No. 4. Stain: Hematoxylin-eosin.

His present illness began one week previous to his admission, with fever, which obliged him to go to bed. Soon pain of a dragging nature came on in the neck, back, shoulders, forearms and legs. It was not much increased on moving about in bed, although he was more comfortable lying quiet and in a flexed position. When he got up, however, and attempted to walk, the pain then became unbearable, and so, frequently, he had been obliged to remain in bed. He had not noted that the pain was attended with any special muscle tenderness, although it was definitely located in the muscles. He was brought to the hospital from Collinsville and was able to walk into the wards. On examination he was a very well-built, well-nourished man, with lips and mucous membranes of a good color. His tongue was coated with a thick white fur. The pupils were equal, not dilated, and reacted to light and accommodation. The temperature on admission was 101.2°, pulse 82, respiration 22. The lungs were negative on examination, but the heart revealed a soft systolic murmur at the base, which was not transmitted. The abdominal organs were negative. There was no edema of the extremities, but the leg muscles were quite sensitive on palpation. On entrance the urine was straw color, 1,018 in specific gravity, acid in reaction and negative for sugar and albumin. Microscopically only epithelial cells were seen, but later urates were found. It was thought, at first, the condition might be typhoid, but his Widal reaction, when taken, was negative. The leucocytes numbered 7,000. The pains, which were definitely located in his muscles, then led us to make a differential count, which, with the further blood examination, resulted as follows: Hemoglobin (Sahli), 103%; red blood corpuscles, 4,447,000; white blood corpuscles, 7,000. Differential count: Polymorphonuclears, 61.8%; lymphocytes, 10.3%; large mononuclears and transitionals, 4%; mast cells, 6%; eosinophiles, 23.3%. By Sept. 13, the eosinophiles had increased to 38%. Led by the increase in eosinophiles we finally induced the patient, after much urging, to allow us to excise a small portion of his muscle. Accordingly, on Sept. 15, 1906, Dr. E. R. Lampson removed a small bit of the right gastrocnemius muscle, 1 x 1 x 2 cm. Macroscopically the fibers appeared quite edematous, but no trichinæ capsules were seen. However, microscopically in the teased fresh specimen, as well as in those subsequently hardened and sectioned (see Fig. No. 1), they were very readily found, two or three being seen in each section, and all definitedly encapsulated. Subsequently the stools were carefully examined for trichinæ with negative results. His temperature, as shown in the accompanying chart, was somewhat elevated for the first five days. It subsequently fell to normal. The patient's treatment consisted in rest and, medicinally, the use of purgatives and glycerine. The latter was used for its supposed hydroscopic effect upon the parasite. Unfortunately, we were unable to watch the patient's continuous improvement for very long, as the gradual cessation of his symptoms caused him to grow restless under restraint, and one morning he escaped from the hospital. His slight symptoms, with the eosinophilia, show us the importance of blood examinations, as they led to the diagnosis of his real disease.



In conclusion I desire to thank Dr. Arthur J. Wolff, of Hartford, for the photomicrograph which accompanies this article.

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BURSITIS SUBACROMIALIS, OR PERIARTHRITIS OF THE SHOULDER-JOINT. (SUBDELTOID BURSITIS.)

BY ERNEST AMORY CODMAN, M.D., BOSTON.

(Continued from No. 21, p. 681.)

Group C, illustrating cases of Type II treated by excision of adhesions and abduction:

Case XV. *Adherent case in vigorous woman.*
Duration, three months when first seen.
Treatment. — Incision into bursa and fixation in abduction.
Result. — Great immediate improvement. Complete recovery in six months.

Mrs. M. J. S. Age fifty-four. Referred to Massachusetts General Hospital by Dr. W. H. Downey, in May, 1905.

Stout, well-developed woman of healthy appearance. Twelve weeks ago fell forward on arm. At the time it did not hurt much, but next day it was swollen and painful about the shoulder. At the time of examination she presented the characteristic symptoms and signs of Type II.

Operation at Massachusetts General Hospital, May 10, 1905. Operation, vertical 3–4 inch incision in bursa at outer side of critical point. An adhesion found on critical point so firm that it had to be cut. In external rotation this adhesion appearing like a firm band could be brought into view in the wound and when cut under tension allowed external rotation to take place with only a few crackles. The finger was then introduced into the bursa and other adhesions separated. Abduction could then be readily accomplished. Inspection of the critical point showed that there was no rupture of the tendon, as was expected, but palpation showed that there was a tear in the capsule between the tendons of the supraspinatus and the subscapularis. Through this the finger could be passed into the true point. (After operation arm was fixed on abduction splint.) On the third day after operation the arm could be passively elevated to its full extent and when once elevated could be held in this position by the patient.

Convalescence was normal and Zander exercises given during the summer by Dr. Boehm. On Nov. 10 the arm was practically normal. On June 6, 1906, the result was perfect.

Case XVI. *Vigorous man of fifty-one. Symptoms at first of Type I, then of Type III, and finally of Type II.*

Duration, one year when first seen.

Treatment. — Incision into bursa, excision of adhesions and fixation in abduction.

Result. — Complete recovery in six months, although arm could be abducted and used even three weeks after operation.

Mr. C. A. C. Age, fifty-one. Referred by Dr. Douglas Graham in January, 1904.

Stout, well-built, vigorous business man. About twenty years ago had severe attack of acute articular rheumatism which crippled him for several years, but from which he completely recovered. In February, 1904, was trying to swing a heavy bag to the platform of a car, when he felt something snap in his shoulder. The injury was not severe, but caused a considerable amount of pain on motion and at night. As it did not wear off, he went to Dr. Graham for massage. During the next six months he received about twenty-five treatments with some benefit, but the trouble was not completely relieved. He then gave up treatment for a number of months, but the soreness and pain persisted. In December, 1904, I saw him in consultation with Dr. Graham and took an x-ray of the shoulder which was negative. I could then make no definite diagnosis. I saw him again in March, 1905, the symptoms having become rather more pronounced. The condition was characteristic of Type III, i. e., the full arc of motion was possible, but there was a painful jog in it. Exploratory operation on the bursa was advised but refused.

The pain and soreness became worse and atrophy of the spinati and some limitation of motion had appeared by April 11, 1905, when I next saw him. I then arranged, with the assistance of Dr. G. O. Clark, an adjustable abduction splint which the patient could wear at times during the day and in the evening. I hoped by this device to give the sore point rest, so that a good night's sleep might be obtained. At first it was of some benefit, but a great deal of pain continued.

I did not see the patient again until June 10, 1905, when he was brought to me by Dr. Stevens, of Cambridge. Some weeks before he had waked in the night with intense pain in the shoulder and Dr. Stevens, his family physician, had been hurriedly called. The shoulder was found to be in a very acute condition (Type I), so that the slightest motion caused great pain. To obtain relief, Dr. Stevens was obliged to fix the shoulder by the application of a sling and circulars. He also blistered the point of the shoulder. Passive and active motions were out of the question so great was the pain and tenderness.

On July 10 I found the condition characteristic of Type II, but a considerable degree of tenderness and muscular spasm persisted. The muscles of the shoulder and arm had become atrophied and the patient's general condition had become wretched. He looked worn and haggard from pain and loss of sleep and was glad to consent to an operation.

Operation at Eliot Hospital, July 13, 1905. Ether. Two-inch incision over anterior portion of bursa between fibers of deltoid. Surfaces of bursa found adherent to within $\frac{1}{4}$-inch of edge of acromion. Adhesions so firm that they had to be divided with knife and scissors before tuberosity could be passed under acromion. Base of bursa lumpy and irregular; these lumps were smoothed off with scissors. By pulling down on arm, finger introduced into subacromial portion of bursa and a few light adhesions broken up. Neither the walls of the bursa nor the separation between the fibers of the deltoid were suturated, with the hope that the serous and bloody drainage would be absorbed by the subcutaneous tissue. The skin was closed with silkworm gut. The arm was then bandaged to an abduction splint.

After the operation there was a good deal of pain and much discomfort for several days. From time to time the splint was removed and readjusted, and even on the first day the patient could actively hold the arm abducted while the splint was being repadded. Within a week the humerus could be slowly brought to the side and again abducted. Primary union. He left the hospital on the twelfth day. Steady improvement in respect to the amount of pain and increase in strength followed. His convalescence was aided by massage by Dr. Graham and exercises with the Zander apparatus.

On Dec. 7, 1905, he could use the arm quite freely except for occasional slight twinges of pain. Examination showed normal motion except that the right hand could not be carried quite so high between the shoulder blades as the left. The patient has been seen since from time to time and has remained well.

Case XVII. *Adherent case. Well-built man in debilitated condition. Duration, two years when first seen.*

Treatment. — Incision and manipulation under ether and Zander exercises.

Result. — Recovery in four months.

Mr. J. N. Age, forty. Massachusetts General Hospital, June 10, 1906.

Fairly well-developed and well-muscled, thick-set individual. Looks worn and tired, but not in ill health. For twenty years has been a shoe laster and has used his right shoulder constantly in his work. Two years ago it began to trouble him by soreness and lameness. Six months ago he had the grip and was obliged to quit work for three weeks. During this time his shoulder became much worse. It was with great difficulty that he was able to keep on with his work until ten days ago, when he could stand it no longer. Has a wife and six children dependent on him, evidently plucky, but has reached the end of his endurance. In spite of blistering, hot water, turpentine, etc., the shoulder has grown worse.

Examination shows characteristic limitations of Type II. There is a certain amount of puffiness over the region of the bursa and tenderness over the tip of the tuberosity just external to the bicipital groove. Great atrophy of the spinati. Cannot put hand behind neck or back, etc. Pain is at the usual distribution on the outer side of the biceps, about the insertion of the deltoid and is much worse at night so that he is unable to obtain restful sleep.

Operation under ether at the Massachusetts General Hospital, July 7, 1906. Incision on point of shoulder between the fibers of deltoid. The subdeltoid portion of bursa firmly adherent. Adhesions in this portion and in subacromial portion broken down with finger and by manipulations. Skin closed without suturing the bursa or muscle. Abduction splint. Convalescence was normal and fairly comfortable. Splint was kept on most of the time for six days and the patient was discharged from the hospital on the eighth day. On the third day motion, although painful, could be carried through the normal arc.

After leaving the hospital the patient returned occasionally for treatment with the Zander apparatus until Aug. 14. At about this time his wife was taken sick and he was obliged to discontinue treatment. However, he did keep up exercises at home for some time longer. A certain amount of pain continued through the summer, but there was steady improvement, and he went back to work in the middle of October. He states that he was perfectly well by November and has remained well since.

When seen on March 28, 1908, the shoulder was perfectly normal in every respect, except the lack of a few degrees of motion in extreme external rotation. In this case, as in most of the others, there was a period between the second and fourth week, when the limitation was more pronounced than immediately after the operation.

DISCUSSION OF TREATMENT ACCORDING TO GROUP C.

As explained under the previous heading, I have in some cases thought that incision into the bursa, and division of the adhesions, offered a safer method than blind rupture of the adhesions under an anesthetic. In Cases XV, XVI and XVII this method was followed, and although at first sight in reading the records one would be inclined to say that the evidence in favor of this method was not strong, yet my personal feeling is that considering the severity of the cases the results were fairly satisfactory. It is my impression that these cases suffered less and obtained the actual functional use sooner than did the cases of Group B, although complete recovery took place in practically the same time.

The cases reported by Painter and Baer recovered in even a shorter time than any of mine. Both Painter and Baer claim to have excised the bursa, adhesions and all. They must mean excision of the subdeltoid portion only, for even in the cadaver it is impossible to excise the whole bursa. However, their treatment differed from mine in the post-operative use of adduction rather than abduction. If their position makes the difference it will simplify the treatment greatly.

It is also rather difficult to define recovery. In some cases pain persists even when good motion is obtained, and in others the reverse is the case. A case may recover to the point of not being troubled by the arm, and yet be unable to use it freely in his usual occupation. Often the patient considers himself well, and yet lacks fifteen or more degrees of the full extent of abduction and external rotation. Finally, cases may be perfectly well in point of function and pain and yet show decided atrophy of the spinati of which they are entirely unconscious.

Therefore, there is a large margin for difference for the factor of optimism on the part of the surgeon. In the cases I have here reported I am quite sure that I have not erred on the side of optimism, and have reported in some instances slight twinges of pain, and barely perceptible atrophy which practically were negligable. In the severe cases, no matter how successful their treatment, the question is one of months not weeks, if these minor points are considered.

What the practitioner and the patient consider recovery is the ability to do back hair, button suspenders and sleep the night through without pain. I am quite sure that the operative treatment is much more satisfactory in these respects than other forms.

In speaking of the treatment of Type II, as a whole, I feel that it is largely a matter for the patient to make the choice between his dread of a comparatively simple and harmless operation and the prospect of pain and incapacity for several months. Where the pain is great, operation will be a great relief; but where there is no pain, and the disability does not interfere with the patient's occupation, the cure may be left to time, and assisted by massage, exercises and manipulations by the physician.

TYPE III.— TREATMENT.

Cases due to an irregularity in the surface of the bursa.

In speaking of prognosis I alluded to the fact that cases of this type were very variable. Many persons have marked crepitus and jerky motions of the shoulder, due to the chronically thickened folds in the bursa. In some cases these folds give pain, in some they do not. When the amount of pain justifies operation an exploratory incision may be made and the offending irregularity removed. Thickened folds, fringers, small osteophytes, calcareous deposits in the base of the bursa, etc., will be found.

The operation is a trivial one if the anatomy of the region is well understood. Cases of this type which consult me, even if advised to have an exploratory operation, seldom consent because I always give a good prognosis without operation. Much relief is experienced from a mere knowledge that the trouble is not serious. Excepting operation, I know of no more effective treatment than massage.

Cases illustrative of Type III in which no operation was done:

Case XVIII. Dr. R. W. Age, sixty-two. Referred by Dr. J. J. Putnam on June 7, 1905.

Patient is a large, vigorous-looking physician in active practice. Considers himself nervous and rheumatic. Is apt to have pain in his joints. Once had a similar localized pain in his knee. Began to have this present trouble in March, 1905. He had normal motion except that in certain positions of the arm there is a distinct "crick" which is very painful. In abducting the arm, instead of raising it smoothly, he has to twist it about to avoid producing the pain. Is apt to rotate it internally and then elevate it. The "crick" does not occur every time he abducts but may occur at any time, often unexpectedly. Sometimes when he is at table a simple motion, like reaching for a salt cellar, will produce the pain. At other times the leaning forward to shut a drawer with his outstretched hand will produce it. Frequently it pains in a dull way at night, so that he has to put a pillow under the arm to get comfort; cannot sleep on the side of the lesion. No localized tenderness except when pain occurs. Ordinary treatments had been ineffectual, but the symptoms were not severe enough to demand operation.

Patient was seen again in spring of 1906, when he stated that the symptoms had lasted about six months and then had disappeared. Recently he tells me that he has since had several attacks of the same trouble, but that they have not lasted more than a few weeks.

Case XIX. Mrs. A. B. R. Age, fifty-six. Referred by Dr. E. E. Bancroft on Sept. 4, 1906.

In February, 1906, had what she considered a trivial injury to the shoulder and felt something snap. Not much pain at the time, but it persisted and grew worse, so that in April she called Dr. Bancroft. At this time she had a great deal of pain at night, could not lie on the affected side (right) and was obliged to sleep with a pillow under the arm.

When seen by me, on Sept. 4, the above symptoms had continued. She also complained of weakness of the grasp of her thumb and forefinger. The pain was very troublesome and prevented a good night's rest. There was tenderness over point of the shoulder, which disappeared under the acromion when the arm was abducted. The full arc of motion was not limited, but was not perfectly regular when the tuberosity passed beneath the acromion.

The condition was explained to her and she was much relieved to know that the symptoms would probably disappear without any serious condition coming on. I have recently heard that she has much improved.

Case XX. Mrs. J. O. F. Age, forty-two. Referred by Dr. Bullard on Feb. 6, 1907.

Well-developed, healthy-looking woman. A year and a half ago began to have twinges of pain in the right shoulder, especially during certain motions, as in putting on coat and doing hair. Until within two months it was more annoying than painful, but has recently been severe, especially when lying down. Symptoms and signs are characteristic of Type III.

The condition being explained to her, and assurance being given that no serious trouble would result, she preferred not to have an operation.

On June 12, 1908, she reports that the arm gave a great deal of trouble after I saw her for about three months. Since then it has been less severe, but she is conscious of it most of the time.

(To be continued.)

Reports of Societies.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

The Thirty-Fourth Annual Meeting was held at Louisville, Ky., Oct. 13, 14 and 15, 1908, with the President, Dr. Arthur R. Elliott, of Chicago, in the chair.

The association convened in the auditorium of the Seelbach Hotel. Prayer was offered by the Rev. John K. Mason, D.D., after which addresses of welcome were delivered by Hon. James F. Grinstead, Mayor, in behalf of the city of Louisville, and in behalf of the state by Hon. Augustus E. Wilson, Governor. Dr. Lewis S. McMurtry responded to these addresses of welcome in behalf of the Association.

The scientific work of the association was divided into two sections, medical and surgical.

Surgical Section.

HERNIA OF THE PELVIC FLOOR.

Dr. Channing W. Barrett, of Chicago, studied the embryological development in its relation to the formation of the abdominal cavity and its walls. The embryology and comparative anatomy of the pelvic floor were reviewed in their relation to the defects of the pelvic floor. The tail muscles of the quadruped were shown to develop into the levator ani muscle of man, so modified in its origin and insertion as to furnish the best floor for the abdominal cavity. Hernia might develop at any place in the abdominal wall, due to weak, defective walls and increased abdominal pressure, but the pelvic floor, by reason of its being the lowest part of the abdominal wall, and by reason of its having natural openings, which at times were much more dilated, especially the vagina, which allowed the fetal head to pass, furnished a frequent site for the development of hernia. Following the overstretching or laceration of the levator ani muscle, the pelvic floor sagged and the abdominal contents took a lower position. The abdomino-pelvic contents began to herniate through the defect, first the bladder or rectum or both, then the uterus and other organs. The terms "laceration of the perineum" and "prolapse of the uterus" were not comprehensive and had led to erroneous treatment. We were dealing with a hernia, and to cure the same we must deal with the muscles and fascia of the pelvic floor. Removal of a prolapsed uterus alone removed only a portion of the contents of the hernia, and not the most troublesome at that, and still allowed a hernial sac to be formed of the vagina, with the rectum, bladder and intestines as contents. Comprehending that we were dealing with a hernia, it was readily seen also that the condition was not cured by a plastic operation upon the vaginal mucous membrane or vulvar skin. While we repaired the defects in the muscles, it must also be remembered that a predisposition of the hernia to return was furnished by the vaginal and rectal outlets. The uterus, which had gotten in line with the vagina, must have its axis put at an angle with that of the vagina. In so-called "prolapse of the rectum" again we were dealing with a hernia. The support of the levator ani muscle was defective. The rectum had a congenital or acquired freedom from the levator muscle. The cure of prolapse of the rectum should deal with this muscle instead of being attempted by futile plastic operations upon the rectum. This work upon the levator ani muscle should be accomplished in cases of laceration of the perineum without causing superficial structures to close the vagina. This could readily be complished by making the line of incision at the junction of the vagina and vestibule instead of upon the labia majora, as was frequently done. This left the normal entrance into the vagina. Superficial perineorrhaphies, not dealing with the levator muscle, were worse than useless.

NEW PROCESS FOR MAKING NEW NOSES.

Dr. H. R. Allen, of Indianapolis, Ind., said that, first, a plaster of Paris mask or reproduction of the noseless space should first be made. Second, model half a dozen or more different noses that were appropriate to the other features of the face. Third, if desirable, model other features of the face that needed improvement. Fourth, construct a hollow metallic bridge or supporting frame, which would reproduce the shape of nose selected when placed beneath the skin. Fifth, operation. The upper lip should be pulled forward and then about 1 cm. below the gingivolabial fold an incision should be made, about one third the thickness of the lip and running parallel with the gum margins of the upper teeth. This incision should terminate about the first molar tooth. The incision should be completed vertically and the soft tissues of the nose and face dissected free from the skull. Care should be taken not to injure the nerves coming out from the infra-orbital foramen nor the tear ducts. Sixth, then place the nostril hook into the nostrils and pass the points around so that they come out underneath the upper lip. Seventh, traction should be made upward and outward upon the hook, and the entire field for supporting the nose frame came into plain view. Eighth, the nasal tissues stretched forward and the foundation prepared for the bridge or metallic support for the new nose. Ninth, the new hollow metallic bridge should be placed under the lip, where it was to rest permanently. Tenth, the original wound was to be sutured.

In the event that there were no soft tissues of the nose and consequently nothing under which to place a metallic bridge, the constructive principles differed inasmuch as it was necessary to dissect out the skin on each side of the nasal orifice and draw the skin together and suture it in the median line. Perinostril openings were to be made. Later on, when a firm union was established, the regular gingivolabial incision was made and the nose construction operation proceeded as described.

Concerning the result, a normal-looking nose and a normal functional nose was permanently established. The motion of the nose was not lost, although it might in some cases be diminished. The procedure was simple and there were no disagreeable sequelæ that he was aware of. The voice was at first modified but soon became normal. There was some advantage in the saving of time and tissues. It took months to make a flap nose and still longer to graft on a finger or other tissues. The flap and graft noses were not artistic. This new method permitted the patient to select his own features because he could have a nose of any shape or size desired.

DISCUSSION.

Dr. M. H. Coomes, of Louisville, said that this was a new departure in this form of surgery. He had thought many times of attempting to do what the essayist had done with such excellent results, but had not had the courage to carry out his convictions. He had made plaster-cast noses and patients had worn them successfully and comfortably. He knew of nothing more mortifying and more derogatory to the welfare of the individual than to have a noseless face or a flat nose. The method described by Dr. Allen should be tried by other surgeons.

Dr. Joseph Rilus Eastman, of Indianapolis, saw one case treated by the essayist and the boy's face was so changed that even his friends hardly knew him. The method Dr. Allen had described was of great value. There were few men, however, who had the artistic sense and mechanical dexterity so well-developed as to be able to arrange a support and fit a nose for it in the artistic way the essayist had done.

SOME CLINICAL CONCLUSIONS AS TO THE VALUE OF VACCINE THERAPY IN SURGICAL INFECTIONS.

Dr. John C. Hollister, of Chicago, gave a brief summary of clinical conclusions of a series of staphylococcus, tubercular and gonococcus cases treated by vaccine therapy, guided for the most part by the opsonic index. Only those cases were considered which had received a vaccine long enough to draw clinical conclusions, and the author insisted upon the care that had been taken to avoid over-statement of facts. Thirty-four staphylococcus cases were persistently treated: 25 by autogenous and 9 by stock vaccines. Cases consisted of 12 of acne, 15 of boils or large furuncles, 2 of empyema, 1 mixed infection with case of lupus, and 2 fistulæ (mixed). Results: 38% plus cured; 38% plus improved; 20% plus not improved. Of the 25 cases treated by autogenous vaccines, 32% were cured, 36% improved and 32% did not improve. Of the 9 cases receiving stock vaccine, 7 were cured and 2 were slightly improved. Forty-one cases of tuberculosis were carefully treated over a sufficient time to draw conclusions. These were cases of bone and joint diseases, 4 of which had also pulmonary involvement; 29 in all; 2 cases of urinary tract infection; 3 cases of pulmonary tuberculosis; 4 cases of glands of neck; 1 generalized (lung, genital tract, skin, conjunctiva), and 1 case of peritonitis. Results: 70% improved, 15 greatly, 13 slightly; 30% unimproved, 13. Of the 13 unimproved, 10 were generalized.

A series of 50 cases of gonorrhea in young women between the ages of twelve to thirty had been observed and treated for the last nine months. They had been divided into five groups for treatment and study, each group representing the others as far as possible. To one group had been given stock vaccine; to another, the usual hospital antiseptic local applications; to a third, a combination of the first and second; to a fourth group simple salt solution irrigations and to the last group had been given antigonococcic serum.

The only conclusion the author felt justified as yet in making was that the gross discharge from the vagina, cervix and urinary meatus seemed to clear up most quickly in groups 1 and 2.

Regarding the opsonic index as a guide to treatment, the author says: "We believe that the index is by no means an unfailing guide for determining the amount of vaccine and the time of administration, for the following reasons: (1) Many cases showing persistent high index display no clinical improvement. (2) Fewer number of cases improve, although the index remains comparatively low. (3) Many cases continue to improve greatly when treated without regard to the index. These reasons apply especially to staphylococcus infection where we have found, as a rule, before treatment, normal or high indices. We do not believe there is a normal index. We believe that the opsonic index, when obtained with careful technic, is a distinct aid in diagnosis, especially in the chronic localized infections. A persistently low or varying index is a strong indication that the patient is suffering from a specific infection. We cannot agree with Wright in drawing conclusions from variations of but one or two tenths in the index. If the patient is receiving vaccines, either those elaborated in his own body, as in systemic infections, or those administered with therapeutic intent, the index of that patient's serum seems to lose to a certain extent its reliability as a register of opsonic content. Evidently other opsonic-like bodies are manufactured by the tissues in response to vaccination."

ADMINISTRATION OF ETHER PER RECTUM.

Dr. Frederic A. Besley, of Chicago, said that the the giving of an anesthetic per rectum for the purpose of producing complete surgical narcosis was not an innovation. It was first mentioned by Pirogoff as far back as 1847. The largest number of cases reported, and the most complete paper on the subject, was by John H. Cunningham, and appeared in the Boston Medical and Surgical Journal, April, 1905. He reported 44 cases. At the present time the method had passed the early experimental stage. There was little doubt that a complete surgical narcosis could be maintained for an indefinite period by giving ether per rectum. The advantage of displacing the anesthetist from the field of operation in head, face, mouth, nose, throat and neck work needed no emphasis. It was recognized that the ether in the blood was eliminated by the respiratory tract, but the amount passing through the air passages was very greatly decreased over the amount inspired during the inhalation method. The technic of administration was very important. The colon must be thoroughly emptied by cathartics and enemas. It was very essential that no liquid ether be allowed to pass into the rectum. A few deaths reported in the early cases were probably all due to this occurrence.

The method he had employed consisted in the admixture of air with the ether vapor and was administered with this apparatus. The apparatus consisted of an ordinary water bottle two thirds filled with ether into which extended a long glass tube. A short glass tube also entering the bottle though the cork did not reach the surface of the ether. An ordinary air bulb such as was used in a cautery was attached to the lock of the afferent tube and through this air was pumped so as to mix with the ether vapor and passed out through the efferent or short tube. Between the short efferent tube, which was connected with the rectal tube, there was a second glass tube so constructed as to prevent the passage of any liquid or condensed ether into the rectum. A Y-shaped tube was so placed in this efferent tube that the gas might be allowed to escape from the rectum and a new charge inserted. The water bottle was placed in water that was 98°, which was just below or about the boiling point of ether. The admixture of air with ether vapor in this manner produced a marked distention of the colon. This distention would materially interfere with intra-abdominal work and limited the field of usefulness of the method.

The writer had had to the present time 16 cases, and felt justified in assuming that the method was perfectly safe, and when the ether was properly given there was no danger of rectal irritation. In two cases the subsequent stools contained a slight amount of blood. Neither of these cases complained of any rectal irritation and it was the author's opinion that the slight bleeding was produced by trauma from the rectal tube. One of these series died seventy-two hours after the operation. The patient had been operated upon for an extensive carcinoma of the tongue. Both external carotids had been externally clamped and a block dissection done on both sides. Subsequent to the operation there were no signs of a colitis, and it could be said that the anesthetic was in no way responsible for the death. One of the marked advantages obtained in this method of administration of ether was a quiet and even respiration, with an absence of the excessive secretion of the mucus along the respiratory tract.

DISCUSSION.

Dr. Daniel N. Eisendrath, of Chicago, said that the method should appeal to every surgeon who was doing work in the regions referred to, where this method of anesthesia was to be applied, namely, in surgery of the head and neck. In the future he would try the method in this class of cases.

Dr. Allen B. Kanavel, of Chicago, had operated on a case in which this method of anesthesia was used, where he resected the superior maxilla, and one could hardly realize the difference between operating by this method and the older method.

BISMUTH PASTE IN THE TREATMENT OF RECTAL FISTULA.

Dr. J. Rawson Pennington, of Chicago, said that the paste consisted of bismuth subnitrate, one part, and vaseline two parts. When a stiffer paste was desired, from 5% to 10% each of white wax and soft paraffine were added. He had treated 17 cases with this paste, in 13 of which the discharge had stopped; the fistula had closed and the patients seemed to be well. This gave $76\frac{8}{17}$% as cured, which he thought was rather high. He attributed this high percentage to his good fortune in getting susceptible cases. The patients' bowels were emptied before the injection of the paste was made. In using the paste the point of the syringe was pressed well into the main opening of the fistula, if more than one existed, and the emulsion slowly injected. Should there be an internal opening, the index finger of the hand not manipulating the syringe was passed into the rectum and made to close the internal opening of the fistula so as to prevent the paste entering the bowel and to aid in forcing it into all of the diverticula and tortuous tracts. With this method, as with surgery, success would depend much upon the technic and thoroughness with which it was carried out. This paste might and had been used to close deep and overlooked tracts after an unsuccessful surgical operation. It was also valuable in complex cases where there were a number of ramifications and a communication with the bowel.

SURGERY OF VENEREAL STRICTURE OF THE RECTUM.

Dr. George B. Evans, of Dayton, Ohio, said that venereal disease of the rectum constituted an affection which had neither been mastered by the syphilographer nor the proctologist. Was this form of stricture of the rectum a local manifestation or was it due to a primary sore? Was it the result of secondary or tertiary syphilis or rather a constitutional infection followed by chronic inflammation and infiltration? According to an author, it was due to the rectum becoming inoculated through the secretions from the sores upon the vulva, thus giving rise to chancroidal ulcers, these ulcers becoming cicatrized and constriction taking place. He had seen many cases of chancroid of the vulva extending down and involving the anus of the worst kind, but stricture of the rectum did not exist. If chancroidal virus was carried into the rectum, we surely would find that every prostitute would have a stricture of the rectum. He believed that secondary induration of the rectum following a chancroid could occur. This induration might be followed by a chronic inflammation and ulceration and develop cicatricial tissue, thus forming an extensive stricture from which a double infection might occur. The true explanation of the preponderance of stricture in women, whether specific or otherwise, is to be sought for rather in the anatomical relations of the rectum than in any constitutional diathesis. The site of the stricture was generally at or about the attachment of the fibers of the levator ani muscles. This possibly was an important causative factor indirectly, there being more or less constriction here; consequently, if there was any ulceration, the power of resistance in the patient was not sufficient to overcome the trauma. Here it was where the feces met their first resistance and where these strictures underwent contraction and chronic inflammation followed. He was of the belief that rectal stricture might follow chancroidal infection by virtue of pathology, which might be the result of absorption or lodgment of infectious matter on the mucous membrane or in the submucous or even parirectal tissue and that rectal strictures might be but a latent manifestation of syphilitic infection. This belief was in accord with the author's experience and was the reasonable deduction to be drawn from the experience of other competent observers.

OBSTRUCTION OF THE BOWEL.

Dr. Charles T. Souther, Cincinnati, discussed the symptoms and treatment of intestinal obstruction. Under treatment he spoke of the mechanical, medicinal and surgical treatment. As to enterostomy or colostomy, a small incision, not over two inches, unless the patient was very fat, should be made over the site of greatest distention, one inch in the peritoneum, and deliver the knuckle of gut that presented, put on rubber clamps, put in a purse-string suture around the site of the intended buttonhole in the gut, then open the gut large enough to insert a flange elbowed glass tube, with rubber tube attached; tie the first purse-string suture and put in a second purse-string around the tube. One should then release the rubber clamp and allow the gas and feces to escape and an irrigation could at once be made while the gut was delivered, and one ounce of salts could be run through the tube into the intestine. Next return the gut to the cavity and stitch the same with two to four stitches of silk to the peritoneum and transversalis fascia only and two through sutures of silkworm gut would complete the operation. A large self-retaining catheter might be used for a drainage tube, and the gut invaginated with two purse-string sutures around the catheter, and when this was removed the gut tended to close more easily than after a glass tube had been used and the catheter could be more easily removed. Enterostomy and colostomy, with local anesthesia, would greatly reduce the mortality from intestinal obstruction. The relief of distention and drainage were the essential features in the absence of gangrene.

ENTEROSTOMY: ITS VALUE IN INTESTINAL OBSTRUCTION.

Dr. Earl M. Gilliam, of Columbus, Ohio, said that while certain types of intestinal obstruction might respond to therapeutic measures, other forms required a resection of the bowel, liberation of adhesions or the establishment of an artificial fistula. There were times when the surgeon hesitated to advise a resection or to do an enterostomy. This should depend largely on the general condition of the patient and the pathological changes present in the affected structures. Enterostomy for intestinal obstruction was simple in its performance and it might under certain conditions be classed as a lifesaving measure, tiding the patient over the critical stage of the disease until a more opportune time presented for thorough work. This might apply to dynamic, paralytic or mechanical obstruction. Even in inoperable cases an enterostomy might be demanded to establish an outlet for effete matter and such often contributed greatly to the patient's relief. Acute ileus might call for an enterostomy. Emptying the bowel by such means relieved the acute obstruction, diminished the congestion and might arrest a fulminating or spreading peritonitis.

(*To be continued.*)

Book Reviews.

Surgery of the Ureter: An Historical Review (1585–1905). By Benjamin Merrill Ricketts, Ph.B., M.D., LL.D., Member American Medical Association; Cincinnati Academy of Medicine; American Proctologic Society; Honorary Member Medical Society State of New York; Member Société Internationale de Chirurgie, etc., etc. Cincinnati. 1908.

This little book, published by the author, is a complete chronological bibliography of the surgery of the ureter. It is interesting and will prove extremely valuable to future writers on the subject of the title.

General Surgery: A Presentation of the Scientific Principles upon which the Practice of Modern Surgery is Based. By Ehrich Lexer, M.D., Professor of Surgery, University of Königsberg. American edition edited by Arthur Dean Bevan, M.D., Professor and Head of the Department of Surgery, Rush Medical College, in affiliation with the University of Chicago. Authorized translation of the second German edition by Dean Lewis, M.D., Assistant Professor of Surgery, Rush Medical College. With 449 illustrations in the text, partly in color, and 2 colored plates. New York and London: D. Appleton & Co. 1908.

The Lexer-Bevan "General Surgery" was sorely needed and should fill a unique place. The sub-title of the book — A Presentation of Scientific Principles — most properly describes the work, and the 1,015 pages of text illustrate admirably the theme. The editor states in his preface: "In textbooks on surgery in all languages, two great divisions of the subject are made. . . . In England and America the terms 'Science and Art of Surgery,' and the 'Principles and Practice of Surgery' have been generally employed. On the Continent the terms 'General and Special Surgery' are used. These latter seem to me preferable, and we have, therefore, retained the term 'General Surgery.'" These reflections are sound and true, but in looking over the numerous treatises on surgery which pour from English and American presses one observes a further fact, namely, that our one-volume Surgeries may be divided into two classes: general Treatises, which deal briefly and often inadequately with all phases of surgery; or operative Surgeries, which discuss operative therapeutics only. For a long time it has been evident that the immense expansion of surgery in modern days has rendered impossible a comprehensive treatise in one volume on both the principles and the art of surgery, while an operative surgery deals obviously with a small phase of the great subject of surgery. The publication of an American edition of Lexer's "General Surgery" is, therefore, an encouraging and hopeful sign.

This book suggests the proper method of studying surgery, for as Bevan states further in his preface, the ground covered here is followed in the third year by his medical students in a course extending over six months, with recitations, conferences and laboratory work. Such work, with the addition of a six-months' course in surgical anatomy, is made a prerequisite to the study of regional and special surgery. It remains then for some writer to provide American medical students with a proper one-volume Treatise on regional and special surgery, — a treatise which shall not be encumbered with general surgical principles, but shall supplement directly the Lexer-Bevan publication.

As an example of the advantages of such a book as that before us one notes the unusually comprehensive chapters on the principles of wound treatment; aseptic technic; anesthesia; infections, etc., etc., — matters which the crowded pages of the ordinary textbook of surgery leave incomplete. We read here, also, Lexer's exceptionally important and concise statements on modern conceptions of infection and immunity and the application of this knowledge to surgery. In addition to the extensive writing of the German author, Bevan and Lewis have made several important additions and changes; they have included in the book Oliver Ormsby's excellent chapter on Blastomycosis and Rosenow's chapters on Blood Examination and Opsonic Therapy, while the editor has added an admirable abstract of Crile's recent work on the Transfusion of Blood.

Such are a few notes on this valuable and attractive book. Teachers of surgery will do well to follow Bevan's example and introduce the volume generally into the curriculum of third-year medical students.

Pharmacology. The Action and Uses of Drugs. By MAURICE VEJUX TYRODE, M.D., Instructor of Pharmacology in the Medical School of Harvard University. Philadelphia: P. Blakiston's Son & Co. 1908.

The occasion of many textbooks is through the requests of students for a statement of the subject-matter discussed by their instructors. Such is the case with this volume of Dr. Tyrode. He has written the book in response to the request of his pupils for a small, concise epitome of pharmacological knowledge. The result is an excellent presentation of the subject in the relatively brief compass of 255 pages, including the index. Although the literature has been liberally consulted in the preparation of the work, its scope has necessarily prevented references. The method of presenting the subject is certainly a good one. Groups of drugs are taken up, discussed in a general way, their action summarized, their uses and application given, and finally there is a brief description of preparations used in medicine, with dosage. The use of capitals is happy and makes the book admirably easy for purposes of reference. After an introduction on definitions, and general remarks on the action of drugs, the book is divided into four parts, as follows: First, drugs whose constitutional action is in greater prominence, including twenty-five groups; second, secretions and extracts of animal organs, with six groups; third, drugs whose local action is most in evidence, considered under seven headings; and fourth, drugs of inorganic origin, under five headings. We commend the book as a succinct statement of the more important facts with which students and physicians should be acquainted in the pharmacological action of drugs.

Studies in Laboratory Work. By C. M. DANIELS, M.B. Camb., M.R.C.S. Eng., Director of the London School of Tropical Medicine, and A. T. STANTON, M.D. Tor., M.R.C.S. Eng., D.T.M. and H. Camb., Demonstrator London School of Tropical Medicine. Second edition, thoroughly revised. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1907.

It is not strange that a second edition of this work on tropical medicine should have been quickly demanded. The advance in our knowledge of this subject has been notable, and particularly with relation to certain carriers of disease, among which ticks, biting flies and fleas are conspicuous. In the preface it is stated that "the book is intended for the lonely worker in his private laboratory." For such a person it is, no doubt, of particular value, but it will also receive a much wider recognition on the part of all who are attempting to keep in touch with the extraordinary progress now being made in this study of transmissible disease as it occurs, particularly in the tropics. We cordially commend the book, which is excellently illustrated by many drawings, a few photographs and several colored plates. A voluminous index concludes the volume.

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THE EMMANUEL MOVEMENT OF MENTAL HEALING.

FEW irregular movements in medical practice have succeeded in gaining so wide a publicity as this of the so-called "Emmanuel Movement," inaugurated and developed by Rev. Elwood Worcester, of the Emmanuel Church in Boston. The reasons for this are not far to seek. The methods used are claimed to be novel, inasmuch as "sound religion" is associated with scientific method in the treatment; medical practice is freely acknowledged, but regarded as insufficient in certain cases; a mystical supernatural element is introduced in which prayer plays an important part; Christian Science is to be attacked in its own stronghold, and finally, the medical profession is to co-operate in the work. With this general plan the "Emmanuel Clinic" was actively begun about two years ago. It has been widely exploited, skilfully advertised, has gained many followers, and, according to its promulgators, has spread to all quarters of the earth. All this is not surprising, nor in the least disturbing, except in so far as it implicates the medical profession in a movement for which the latter can in no way be held responsible and which now and always has been absolutely beyond its control.

It is true that at the outset Dr. Worcester gained the tentative approval of certain prominent neurologists; it is also true that others vigorously disapproved of his plan from the first; but to these small attention was paid. Many others in the medical profession with small knowledge of the real questions at issue were indifferent. The cornerstone of the movement, according to the repeated statements of Dr. Worcester, has been the co-operation between the medical profession and the Church. In this matter there has evidently been much misrepresentation. The fact is that the medical profession as a whole in this city, as in others, never has stood behind the movement and is increasingly less inclined to do so. Even its chief medical apologist has on more than one occasion said that social workers and others were more competent to carry on the work than ministers. Certainly the neurologists of this and other communities as a class regard the movement as a mistake and inimical to the best interest of the community at large. In view of his repeated expressions of opinion in this matter, it would seem to be incumbent upon Dr. Worcester to restate his attitude. That he now has no appreciable backing from men particularly concerned with neurological practice and teaching is apparent to those who have followed recent events, nor has he the active sympathy of other informed members of the profession. Under these circumstances we await with interest his further course. The time has certainly come to correct the widespread opinion, which has been so large an asset of the whole movement, that the medical profession approves of this bizarre therapeutic effort. It should be distinctly understood that the public utterances of individuals are not to be taken as expressions of general medical opinion.

Apart from all other considerations, we are also convinced that the kind of co-operation which Dr. Worcester supposes he has is an impossibility as a general principle. It is not for a moment to be conceived that this great field of mental therapeutics is to be turned over to the churches, nor is it conceivable that representative medical men will indefinitely stand between the public and the minister to pass on patients which it is their manifest duty to treat themselves. That the profession at large needs instruction in the practice of psychotherapy we willingly admit; we believe that such instruction should be given at medical schools, to the end that the limitations as well as the possibilities of mental treatment be laid down, so far as our present knowledge permits. We furthermore believe that common loyalty to the profession and its traditions should not permit us to encourage an irregular movement in psychotherapy any more than we would encourage an irregular movement in any other department of medicine. We emphatically deny that Dr. Worcester has anything to offer in the way of psychotherapeutic procedure which is denied the physician, unless it be the emotional element associated with prayer, and this, whatever it may be in last analysis, is insufficient upon which to build a cult of healing. The public appeal and newspaper notoriety are so totally alien to legitimate medical methods that they require no discussion at this time.

The only knowledge which is of value in the field of abnormal psychology and mental therapeutics has been gained from the laborious investigations of psychologists and physicians. This all are free to use, but that its use is best safeguarded and likely to be productive of the best results in the hands of men with general medical training will not generally be denied. The field is foreign to the ordinary clerical mind and is not a matter which in any large way concerns the churches. It is, however, essentially a medical problem, which very intimately concerns the medical profession, and which the profession is quite capable of handling in the future as it has in the past. If the fate of the churches, as Dr. Worcester implies, depends upon a personal healing ministry in the physical sense, it is surely time that their doors be closed. We are, however, under the impression that the churches have never been so active as now in good works, in the establishment of hospitals and dispensaries and in legitimate co-operation with medicine. It will be highly unfortunate if this salutary relation, which has existed for centuries, be strained by a confusion in the proper work of the two supplementary professions.

In a broad consideration of the Emmanuel Movement we make no denial whatever that Dr. Worcester and his associates have benefited many individuals; so they did before the movement was started, and so do many others whose names are never heard, both within and without the Church. The good the movement does is apparent and may be accepted for what it is worth. The harm it does is fundamental: It places both the medical and the clerical profession in a false light; it raises false hopes; it interferes with the relations between doctors and their patients; it encourages superficiality in the consideration of a great problem; it misrepresents the significance of the psychotherapeutic movement; it is an abuse of medical charity; it retards progress in the only direction in which normal psychotherapeutics can grow — through the medium of the medical profession.

It is perhaps idle to speculate regarding the future of the movement. This much seems certain — that it has wholly alienated the best minds in the medical profession, and that the Church is skeptical, and in some instances openly antagonistic. Under these conditions we can see in it few elements of permanence.

THE OLD FAMILY PHYSICIAN AN ATTRACTIVE FIGURE.

On another page of this issue of the JOURNAL may be found obituary notices, received from the secretary of the Berkshire District Section of The Massachusetts Medical Society, of four medical practitioners of that district who have recently passed away. Such a coincidence should arrest, if only for a brief moment, the attention of their busy medical brethren who survive and succeed them.

Of these men the oldest was ninety years and the youngest over seventy at the time of their deaths; of the other two, one was eighty-one years old and the other seventy-eight. One had practised his profession for sixty-five years in the same town. "During all this long period he led the life of a busy practitioner, and yet he retained his physical and mental vigor in a remarkable degree, and continued in the active practice of his profession until within five days of his death. . . . He was spared the decrepitude of old age, and was given strength to minister to the sick until his summons came."

Another of the group practised in the same town of Lee for about fifty years, was president of the District Medical Society, for many years the medical examiner of that district, and a member of the local board of health. As a citizen he was no less exemplary and public spirited, having been for thirty years a director of the Library Association, for twenty-seven years a director of the national bank, and for ten years its president.

A third member of the group practised for fifty-five years in the town of Adams, holding "a place in the estimation of the community such as few men hold, being respected and loved by all with whom he came in contact." He also was president of the District Medical Society, and for many years served his town as health officer, school committeeman and town physician. He was elected to the state legislature and served there on the Committee on Public Health. It is recorded that "empiricism was most distasteful to him and that the charlatan he could not and would not tolerate."

Of the fourth member of this remarkable group, we learn that he practised in Pittsfield for more than forty years, continuing active in his professional duties up to the time of his death. He showed a loyal interest in the civic duties of his community, having been for thirty-six years a member of its school board, and associated in the government of Pittsfield long before it became a city. It is recorded that "he was truly of that older school of physicians, a class of men admired increasingly as the years go by, the limitations of whose activity geographically were the boundaries of the entire county, in whom extraordinary emergencies had developed great self-reliance, and who possessed at all times a keen conception of high professional ideals."

These men were admirable representatives of a type which is passing away with them. Their removal is a distinct loss to their surroundings, to the communities in which they pursued their beneficent activities and to the state, and puts a heavy responsibility upon their successors.

They had a shrewd knowledge of human nature and how to deal with it, even though perhaps without a conscious knowledge of modern psychotherapeutics and its phraseology. They were probably somewhat ill-informed as to the rapidly developing, multiplying and changing investigations of laboratory work in scientific medicine in the more recent years through which they had lived, but they had a self-reliant readiness to meet the emergencies of actual practice born of genuine personal experience under varied conditions.

What manner of man is to be the successor of such in another generation? Are the friends and neighbors, is the community, is the state, to be a gainer or a loser? What are to be the effects of specialism, of the telephone and automobile, of the increase in small local hospitals, of the changes in the teaching in our medical schools of the higher grade, and the disappearance of the old-fashioned medical pupilage? We may well ask ourselves these questions, to which the answer will probably come that conditions of practice in the country towns and smaller cities may be worse, or they may be better than they were as known to these men, but they will surely be different.

As for these men themselves, and those of their generation whom they typify, their lives are secure. They may not have got, and probably did not get, riches; but if, as we are assured by the high authority of the president of Harvard University, the joy in work is the real satisfaction of every professional man, and there is no joy in the world, except that which we win through our homes, like that of strenuous work, then the cups of these doctors should have been running over. They bore manfully the burdens and heat of the day, with the daily privileges.

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"ATWEEN them they've hed the countryside for weel on tae a century; if MacLure disna understand oor constitution, wha dis, a' wud like tae ask?"

MEDICAL NOTES.

Appointment of Mme. Curie. — Mme. Curie, the joint discoverer of radium with her husband, has received the appointment of professor of physics in the faculty of science in the University of Paris.

Nobel Prizes. — It is unofficially announced that certain of the Nobel prizes are to be awarded as follows: Chemistry, Prof. Ernest Rutherford, director of physical laboratories of the University of Manchester, England; Physics, Prof. Max Planck, professor of mathematics and physics, University of Berlin; Medicine, divided between Dr. Paul Ehrlich, of Berlin, and Prof. Elie Metchnikoff, of the Pasteur Institute, Paris.

A Medical Woman as Mayor. — Mrs. Garrett Anderson, M.D., has been elected by its municipal council, mayor of Aldeburgh, England. It is her native town, and her father was its first mayor when the borough became a reformed corporation. She is seventy-two years old, has worked for woman suffrage for the last thirty years and for twenty-two years — from 1876–1898 — was dean of the London School of Medicine for Women. She took her medical degree in Paris.

New Location for Philadelphia Clinic for Home Treatment of Chest and Throat Diseases. — The Board of Trustees of this institution has recently purchased the property, 2114 Lombard Street, and has made application to the State Board of Charities for an appropriation to adapt the building for the work of the clinic. Until these alterations are completed, the clinic will continue to be held in the temporary rooms, 519 South Fifteenth Street, Mondays, Wednesdays and Fridays at 3 p.m. The work of the clinic has been very satisfactory.

Dr. Frank Read is president of the Board of Trustees, and Dr. Thomas J. Mays is medical director.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Nov. 17, 1908, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 94, scarlatina 63, typhoid fever 14, measles 18, smallpox 0, tuberculosis 49.

The death-rate of the reported deaths for the week ending Nov. 17, 1908, was 15.84.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Nov. 21, 1908, was 177, against 198 the corresponding week of last year, showing a decrease of 21 deaths and making the death-rate for the week 14.92. Of this number 90 were males and 87 were females; 175 were white and 2 colored; 125 were born in the United States, 51 in foreign countries and 1 unknown; 47 were of American parentage, 109 of foreign parentage and 21 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 88 cases and 10 deaths; scarlatina, 61 cases and 3 deaths: typhoid fever, 16 cases and 1 death: measles, 22 cases and 1 death; tuberculosis, 62 cases and 17 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 19, whooping cough 0, heart disease 21, bronchitis 6 and marasmus 6. There were 9 deaths from violent causes. The number of children who died under one year was 43; the number under five years 56. The number of persons who died over sixty years of age was 44. The deaths in public institutions were 59.

Cerebrospinal meningitis, 1 case and 1 death.

Deducting deaths of non-residents, the total is 161. The corrected death-rate is then 13.57.

Tuberculous Cows. — It is reported that six of the thirty cows on the county farm at Grasmere, N. H., have been destroyed, as it was found that they were suffering from tuberculosis.

Scarlet Fever in Nantucket. — It is announced that, owing to the discovery of a number of cases of scarlet fever among school children, the schools of Nantucket have been closed by order of the school board. Thus far the cases are of light form.

Bequests. — By the will of Franklin W. Russell, of Pittsfield, Mass., the House of Mercy in that city receives $25,000 in addition to $1,000 for the maintenance of an S. E. Russell room in the hospital; and the Graduate Nurses Association, $5,000.

Boston Association for the Relief and Control of Tuberculosis. — The Boston Association for the Relief and Control of Tuberculosis held its annual meeting Tuesday, Nov. 17, at the Twentieth Century Club. The reports for the year were received and officers for the ensuing year were elected.

NEW YORK.

Rural and Urban Death-Rate. — In the month of September the rural death-rate in the state exceeded the urban, being 16.3, as against 15.6 in the cities. The urban birth-rate was 26.9, and the rural rate 17.1.

Bequests. — Among the charitable bequests in the will of the late Mrs. Emma Gertrude Keep Halsey, wife of Frederick R. Halsey, of New York, are legacies of $50,000 to St. Thomas's Protestant Episcopal Church, to be used exclusively for the benefit of the Halsey Day Nursery, as long as it bears that name, and $10,000 to the Flower Hospital, and $5,000 to the Stony Wold Sanatorium for Consumptives in the Adirondacks.

Society for Relief of Ruptured and Crippled. — The annual meeting of the New York Society for the Relief of the Ruptured and Crippled was held on Nov. 13. During the past year there were treated at the hospital on Lexington Avenue, including the out-patient department, 46,272 patients, of whom 1,026 were the subjects of infantile paralysis resulting from anterior poliomyelitis. The expenditures of the hospital for the year amounted to $111,492, or $29,711 in excess of the receipts.

Exhibit of International Congress on Tuberculosis. — It is announced that the exhibit of the International Congress on Tuberculosis will be opened at the American Museum of Natural History on Nov. 30 and that Mayor McClellan will make an address on that occasion. Governor Hughes is to speak on New York State day. The material has already been brought on from Washington, but it has been decided to defer the opening until the date mentioned in order to enable the committees in charge of the exhibit to advertise it more thoroughly among all classes in the community.

Anniversary Discourse, New York Academy of Medicine. — The anniversary discourse of the New York Academy of Medicine for 1908 was delivered on Nov. 19 by Major Charles Lynch of the United States Army Medical Corps, who was the medical observer of the general staff with the Japanese armies during the Russo-Japanese war. His subject was "The Medical Service in a Modern Army in War as exemplified by the Japanese Army in the Russo-Japanese War," and the lecture was illustrated by many lantern slides made from photographs he took in the Manchurian campaign. It was followed by the annual reception at the Academy.

Work of Floating Hospital. — At the annual meeting of the St. John's Guild, which was held on Nov. 10, it was reported that more trips were made with the Floating Hospital, and more mothers and children carried during the past season, than in any previous year. There were 49 trips, and 44,414 individuals were taken on them. There was also an increased number of patients at the Seaside Hospital at New Dorp, Staten Island, which was kept open during the months of June, July, August and September, and the entire number of cases treated by the Guild amounted to 14,217, as against 8,106 in the summer of 1907. The ordinary contributions received, notwithstanding the financial depression, were $3,713 in excess of those of the year previous, and the endowment fund was increased by contributions and bequests from $50 to $100,000.

Appointment of Dr. Frederic Brush. — Dr. Frederic Brush, of Boston, has been appointed superintendent of the New York Post-Graduate Medical School and Hospital, as a preliminary to the enlargement of the institution's field of work made possible by the legacy of more than two million dollars recently received by it. It is stated that before commencing his active duties he will visit various medical centers in this country, and that from special information thus gained, together with that obtained by several members of the faculty in Europe during the past summer, plans for the development of the future Post-graduate will be formulated. It is believed by those interested in its work that one of the largest tasks confronting American medicine to-day is the sanitation of small towns, villages and farms, where primitive ideas in regard to matters of health and the prevention of disease still widely prevail, and that proper enlightenment can best be promoted by sending back to the rural districts physicians who have had the opportunity of studying the most approved modern scientific methods of investigation and practice.

Opening of Mount Moriah Hospital. — The opening ceremonies of the new Mount Moriah Hospital on Second Street, between Avenue A and First Avenue, were held on Nov. 15. Addresses were made by P. F. McGowan, president of the Board of Aldermen, representing the mayor; Edward Lauterbach; Bernard Semil, president of the hospital committee, and Jacob Schiff, president of the Montefiore Home and Hospital for Chronic Invalids, who at the close of his remarks presented a check for $1,000. Mr. Lauterbach stated that there was some difficulty in getting a charter for the new institution from the State Board of Charities, owing to the opposition of the committee of the Beth Israel Hospital, situated lower down on the East Side, and that it was his intention to go before the board at its next meeting and argue on behalf of the Mount Moriah Hospital. Mr. Semil, in his address, said that the hospital proper could be opened without a charter, but not the dispensary department. In the last report of the Beth Israel Hospital it was stated that one thousand cases were turned away last year for lack of accommodation, and it was, therefore, difficult to understand why objections should have been made by that institution. He then went on to say that $75,000 had been subscribed for the Mount Moriah Hospital and the expenses for its maintenance guaranteed. The hospital has been constructed from two private residences, which have been altered and fitted up with modern requirements, including baths on each floor. These are eighty beds for adults and twelve for children, and accommodation for an ambulance has been arranged at a neighboring stable.

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Current Literature.

New York Medical Journal.
Oct. 24, 1908.

1. **Jelliffe, S. E.** *The Alcoholic Psychoses. Chronic Alcoholic Delirium. (Korsakoff's Psychosis.)*
2. **Kinch, C. A.** *Diagnosis of Erythematous and Exanthematous Rashes.*
3. ***Pfahler, G. E.** *A Summary of the Results obtained by the X-Ray Treatment of Exophthalmic Goiter.*
4. **Lewis, W. M.** *A Case of Squamous-Celled Epithelioma.*
5. **Chambers, G.** *The Diagnostic Value of Perverse Secretion of Hydrochloric Acid by the Mucous Membrane of the Stomach.*
6. **Grad, H.** *Hyperemesis during the Gravid State in Two Successive Pregnancies.*
7. **Jones, L. A.** *The Need and Value of Health Inspection Work.*

3. Pfahler has collected from the literature forty-six cases of exophthalmic goiter treated with the x-ray, and adds five of his own. Forty-two of these fifty-one cases were much improved. The good results appeared almost without exception within a month. The improvement consisted of an increase of weight and strength, and gradual disappearance of the Basedow symptoms. The treatment was localized in the goiter. There were usually two treatments a week. There is apparently no danger when the x-rays are properly administered, and this treatment is enthusiastically recommended by the writer for a month's trial in all cases of exophthalmic goiter. [R. I. L.]

Oct. 31, 1908.

1. **Knott, J.** *The Origin of Syphilis and the Invention of its Name.*
2. ***Butler, W. J., and Mefford, W. T.** *Precipitate Reactions with Lecithin, Sodium, Glycocholate and Sodium Taurocholate for the Diagnosis against Syphilis.*
3. **Knopf, S. A.** *The Popular Lecture in the Crusade against Tuberculosis.*
4. **Judson, A. B.** *The Expectant Treatment of Pulmonary Tuberculosis. A Contribution from Orthopedic Surgery.*
5. **White, W. C.** *Family Tuberculosis.*
6. **Blake, J. E.** *Report of Six Months' Work in the Brooklyn Hospital Dispensary, First Surgical Division.*
7. **Knapp, M. I.** *Insufficientia Pylori versus Einhorn's Achylia Gastrica.*

2. There have been many attempts to simplify the technic of the so-called Wasserman's serum reaction for syphilis. Butler and Mefford studied the comparative value of the original method and the precipitate reactions obtained with a lecithin solution, and solutions of sodium taurocholate and sodium glycocholate. They found that the serum reaction (Wasserman's technic) gave a positive reaction in 90% of all cases of syphilis and parasyphilis. Sodium glycocholate and sodium taurocholate solutions were apparently about equally delicate, giving 48% and 50% respectively of positive precipitate reactions with the same active sera. With the same inactive sera (sera heated to 56° C. for one-half hour), the positive reactions were 68% and 60% respectively. The lecithin solution gave 76% of positive reactions with the active sera of these same cases of syphilis and parasyphilis, and 85% of positive reactions with the inactive sera. Omitting the cases of parasyphilis, the lecithin solution gave a positive precipitate reaction with 96% of the sera. However, the lecithin solution gave positive reactions with fully 50% of the control sera. Hence the precipitate reaction with the lecithin solution is definitely non-specific for syphilis. The solutions of sodium glycocholate and sodium taurocholate gave very few positive reactions with the control sera. However, the serum reaction (Wasserman's technic) surpasses in the percentage of positive results, and in reliability, the various precipitate reactions. [R. I. L.]

Journal of the American Medical Association.
Oct. 17, 1908.

1. ***Finney, J. M. T.** *Gas Cysts of the Intestine.*
2. **Churchill, F. S., and Soper, A. C.** *The Inoculation Treatment of Gonococcus Vulvovaginitis in Children.*
3. **Butler, W. J., and Long, J. P.** *Vaccine and Serum Treatment of Gonorrhea in Female Children.*
4. **Hanson, D. S.** *Hydrotherapy in Scarlatina.*
5. **Knox, J. H. M., Jr.** *Character of the Stools with Reference to the Intestinal Findings in the Diarrheal Affections of Infants.*
6. **Zenner, P.** *A New Sign for the Detection of Malingering and Functional Paresis of the Lower Extremities.*
7. **Babler, E. A.** *Perforative Appendicitis complicating Pregnancy, with Report of a Successful Case.*
8. **Guthrie, C. C.** *Results of Ovarian Transplantation on Body Weight and Egg Weights in Fowls.*
9. **Ladd, L. W.** *Serum Treatment of Epidemic Cerebrospinal Meningitis.*
10. **Sladen, F. G.** *The Serum Treatment of Meningitis.*
11. **Payne, R. L., Jr.** *Ureterovesical Implantation.*

*1. Finney reports a case of gas cysts of the intestine. These tumors, common in hogs, are very rare in man. There are no other reported cases in America, and Finney was able to collect only 18 cases from the entire literature. The condition is a pathologic curiosity, and causes no clinical symptoms. From the study of this specimen Finney inclines to the belief that the growth is a distinct variety of tumor, the cells of which have the faculty of secreting gas. [R. I. L.]

Oct. 24, 1908.

1. **Hunt, R., and Seidell, A.** *Commercial Thyroid Preparations and Suggestions as to Standardization of Thyroid.*
2. **Posey, W. C.** *Myotics versus Iridectomy in the Treatment of Simple Chronic Glaucoma.*
3. **Schenck, B. R.** *Fibromyomata of the Uterus, and Anemia.*
4. **Fordyce, J. A.** *Some of the More Unusual Forms of Epithelial Growths of the Skin.*
5. **Brown, J. Y., and Swahlen, P. H.** *Traumatic Rupture of the Uterus and Bladder during Labor at Full Term.*
6. **Kerley, C. G.** *Personal Observation in Scarlet Fever.*
7. **Wahrer, C. F.** *An Epidemic of Hemorrhagic Nephritis following Scarlet Fever.*
8. **Sachs, T. B.** *Children of the Tuberculous.*
9. **Brown, A. G.** *The Problem of Heart Maladies.*
10. **Aronstam, N. E.** *The Neisser or Gonococcus Vaccine in Gonorrheal Affections of the Genito-urinary Tract.*

11. Bowers, W. G. *Hydrotherapy: Methods of Application, with Results, as used in the Philadelphia Hospital for the Insane.*

Oct. 31, 1908.

1. Osborne, O. T. *Sufficiency of the Official Drugs and Preparations in the Medical Treatment of Disease.*
2. *Hartzell, M. B. *Arsenic in Diseases of the Skin, with Observations on Sodium Cacodylate and Atoxyl.*
3. Thayer, A. S. *Work Cure.*
4. Strauss, S. *The Serum Treatment of Carcinoma.*
5. Reagan, O. *Some Therapeutic Observations.*
6. Trask, J. W. *Milk and Its Relations to Infectious Diseases.*
7. Dutton, W. F. *The Responsibilities of Municipalities in the Ohio Valley for Epidemics of Typhoid Fever.*
8. Breitenbach, O. C. *Choleriform Diarrhea of Cold Weather — "Winter Cholera."*
9. McAlister, A. *Fresh-Air Treatment in the Home as Applied to Pediatrics.*
10. Craig, D. H. *The Menopause.*

2. Hartzell places little reliance on arsenic in chronic eczema. In pemphigus and dermatitis herpetiformis, arsenic frequently exhibits an inhibitory influence. In sarcoma of the skin and mycosis fungoides occasional good results are seen when the arsenic is given hypodermatically. In psoriasis and lichen planus arsenic has a distinct place among the internal remedies. In the writer's experience atoxyl and sodium cacodylate do not possess any therapeutic properties not to be found in arsenious acid, Fowler's solution or the arseniate of soda. Owing to the great solubility of atoxyl, and its freedom from irritant properties, it is especially adapted for hypodermatic use, a method of using arsenic which usually gives superior therapeutic results. [R. I. L.]

The Lancet.

Oct. 24, 1908.

1. Ormerod, T. A. *Heredity in Relation to Disease.*
2. Gibson, G. A. *The Limits of Knowledge.*
3. Hewett, J. P. *Sanitation in India.*
4. Lewers, A. H. N. *Notes of a Case in which Nine Confinements were terminated variously.*
5. *Tillmanns, H. *Some Points about Puncture of the Brain.*
6. *Sabadini. *Notes on Six Hundred and Seventy-nine Operations performed under Spinal Anesthesia (Cocaine or Stovaine) by Tuffier's Method.*

5. Tillmanns believes that puncture of the brain is indicated in all cases when the diagnosis of a given cranial injury or disease is uncertain, or whenever there are signs of pressure in the brain itself or in the ventricles. Therapeutic puncture of the brain, except in certain cases of hydrocephalus, he does not recommend. He describes in detail the technic of this procedure, which in all essentials is similar to that of trephining. The operation itself is simple and relatively harmless and may be repeated if need be. He describes the steps to be taken in puncturing the lateral ventricle.

6. Sabadini concludes, as the result of this study of 679 cases in which he has used either cocaine or stovaine as a spinal anesthetic, that (1) spinal cocainization is absolutely free from danger. (2) It may be employed by Tuffier's method from ten to fifteen years up to extreme old age for all operations on parts below a line running horizontally across two fingers' breadth below the breasts. (3) This method has the advantage of *absolute* safety and freedom from shock. (He had no fatalities in those 679 operations, some of th gravest nature.) (4) This method has been unjustifiably decried and should be used more. As regards stovaine, he believes that constitutional disturbances, such as headache, nausea and vomiting, are less than with cocaine. The only drawback is urinary retention, occurring in 44 out of 146 cases for a greater or less period. [J. B. H.]

Oct. 31, 1908.

1. MacLeod, J. M. H. *Lupus Erythematosus: Its Nature and Treatment.*
2. *McCarrison, R. *Observations on Endemic Cretinism in the Chitral and Gilgit Valleys.*
3. *Latham, A., and Inman, A. C. *A Contribution to the Study of the Administration of Tuberculin in Pulmonary Tuberculosis.*
4. Poynton, F. T. *Some Unusual Sequelæ of Convulsive Seizures in Childhood.*

2. McCarrison concludes from his observations on cretinism and goiter in India that (1) the degree to which cretinism is associated with goiter varies directly with the extent to which the latter disease prevails among the adult population; (2) cretinism is rarely due to the development of a goiter in the individual; (3) defective thyroid function in the mother is the essential factor in the production of cretinism; (4) cretinism is due to the action of toxic agents, notably that of endemic goiter, on the developing thyroid of the unborn child; (5) the thyroid defect is congenital but may remain latent; (6) the defect in cretinism is one of the whole thyroid mechanism, of the parathyroids as well as of the thyroid gland.

3. Latham and Inman conclude as follows: (1) Tuberculin may be given with effect by the mouth, or rectum, or subcutaneously; the dosage is dissimilar; the effects produced the same. (2) Its administration is of little or no value unless successive auto-inoculation can be prevented. *Absolute* rest is the means of doing this. (3) Careful daily observation of the temperature and of the clinical condition of the patient in most cases is enough to control the administration of tuberculin. (4) In difficult cases, valuable information may often be obtained from determination of the opsonic index. (5) The German method of giving tuberculin by gradually increasing doses is not to be recommended. (6) Tuberculin is a dangerous drug, and its administration requires considerable experience. It is capable of producing disastrous and even fatal results. [J. B. H.]

British Medical Journal.

Oct. 24, 1908.

1. Neil, J. *The Examination and Certification of Mental Patients.*
2. Buchanan, A. *Cats as Plague Preventers.*
3. *Knaggs, R. L. *A Case of Implantation of the Ureters into the Rectum for Extroversion of the Bladder.*
4. Ingram, J. *Brewis's Appliance for Use after Colotomy.*

BRITISH MEDICAL ASSOCIATION.

Section on Tropical Disease.

5. *Charles, Sir R. H., et al. *Discussion on Tropical Abscess of the Liver.*

Section of Dermatology.

6. Garceau, A. *A Case of Mycosis Fungoides.*
7. Tomkinson, T. G. *Treatment of Lupus Vulgaris by Unmodified Sun Rays.*
8. Lancashire, G. H. *The Treatment of Lupus Vulgaris.*
9. Noiré, H. *A Method of Treatment of Hypertrichosis by the X-Rays.*
10. Bunch, J. L. *Bullous Eruptions in Children.*
11. Roberts, L. *Diseases of the Domesticated Animals Communicable to Man.*
12. Gardiner, F. *Occupation Dermatitis.*
13. Eddowes, A. *Isolation of the Klebs-Loeffler Bacillus in Eczematous and Bullous Eruptions.*
14. Gilchrist, T. C. *Experimental Urticaria.*

Section of Laryngology, Otology and Rhinology.

15. *Ballance, C. A. *Discussion on the Diagnosis of the Intracranial Complication of Ear Disease.*
16. Adam, J. *The Nature and Treatment of Atrophic Rhinitis.*

3. Knaggs describes in detail this case and the various operations performed which finally brought about a most satisfactory result. He briefly reports two other cases in which the same operation was used with good results.

5. Charles gives a careful and thorough article on tropical abscess of the liver, speaking especially as regards the etiology and differential diagnosis. He believes that the disease is due to an infection by a micro-organism from the intestinal tract which finds lodgment there owing to dimin-

ished resistance of this organ on account of heat, alcohol, poor food, dysentery and other factors which in tropical climates tend to lower resistance. In his opinion dysentery is not the specific cause of this disease. Anderson, Menyon, Rogers and others who discuss this subject seem to confirm this view as judged by clinical researches and laboratory experiments. Manson disagreed with this view, and thought, though it had not been definitely proved, that dysentery was the cause of liver abscess.

15. Ballance, Whitehead and others discuss in detail the various intracranial complications which may follow aural disease. Among these are extradural abscess, venous infection, meningitis, brain abscess. Microscopic examination of the blood and spinal fluid are most important in diagnosis in addition to the clinical signs and symptoms.

[J. B. H.]

Oct. 31, 1908.

1. Paget, S. *The Work of the Research Defense Society.*
2. *Bryce, A. *The Limitations of a Purin-free Diet.*
3. Rogers, L. *A Case of Tropical Abscess of the Liver Rapidly Cured by Means of the Flexible Sheathed Trocar.*
4. Arnold, M. B. *An Outbreak of an Acute Infectious Eruptive Disease.*
5. Milne, R. *The Home Treatment of Scarlet Fever.*

BRITISH MEDICAL ASSOCIATION.

Section of Pathology.

6. *Symmes, W. St. *Discussion on Cerebrospinal Meningitis.*
7. Telling, W. H. M. *Multiple Diverticula of the Sigmoid Flexure.*

Section of Tropical Diseases.

8. Manson, P. *Discussion on Sanitation in Reference to Ankylostomiasis in the Tropics.*
9. Nattan-Larrier, L. *Cases of Sleeping Sickness, with Nervous and Mental Symptoms.*
10. Elgood, B. S. *Bilharziosis among Women and Girls in Egypt.*
11. *Plehn, A. *The Diagnosis of Latent Malaria.*
12. Watson, M. *Rare Nervous Symptoms Produced by Malaria.*
13. *Daniels, C. W. *Discussion on Lymphatic Diseases in the Tropics.*

Section of Diseases of Children.

14. *Wright, A. *Discussion on Causation and Treatment of Scurvy, especially Infantile Scurvy.*
15. Stephenson, S. *On Interstitial Keratitis, with Especial Reference to Pathogenesis and Treatment.*

2. Bryce feels strongly that the value of a purin-free diet is much over-estimated and cites various groups of cases in which it was given a trial and did not succeed, or in which the results obtained were plainly not due to the restricted diet. Several cases of headache in women were relieved by the diet, which omitted tea and coffee. All good results here he believes to be due to the restriction of the caffeine. Several cases of epilepsy were greatly benefited as regards the convulsions, but rendered in a much worse general physical condition, with a later return of the convulsions; this likewise proved true of cases of asthma, the anemia resulting from the diet causing serious symptoms. Neurasthenic patients were only temporarily benefited.

6. In this discussion of cerebrospinal meningitis, the chief topic was the serum treatment. Holt has collected 442 cases which have received the Flexner serum, and these he tabulates and describes. In this series the mortality was 33.3% instead of 50–80%, as has been the case in former epidemics.

11. Plehn describes the term "latent malaria" as in three stages: First, from the moment of infection to the first chill; second, the phase between single paroxysms of fever, which may be twelve to fourteen days, or sometimes extend over months, especially where quinine is being taken at short intervals; and third, the final period of latency. It is, of course, impossible to say at first whether or not this is to be the final period. It would be of great value if this could be done, so as to tell if it were safe to discontinue the use of quinine. He describes the blood conditions in this period of latency and calls especial attention to the continuance of urobilinuria after all other signs of infection have disappeared. He applies the following test: To the unfiltered urine add an equal quantity of a solution of ten parts of zinc acetate in absolute alcohol in a test tube. Shake and add a few drops of lugol solution and stir. After this the filtered mixture shows fluorescence more or less intensely according to its contents of urobilin. This is not a sign of malaria pure and simple, but only of liver disturbance; but with no other cause of hepatic disorder a latent malaria may be safely diagnosed.

13. Castellani reports remarkable results in cases of elephantiasis by means of injections of thiosinamin or fibrolysin injection combined with constant pressure on the parts by means of pads and bandages. Neither factor alone is of value. The article is illustrated by photographs.

14. Wright, after discussing the nature and etiology of scurvy, concludes that the giving of an antiscorbutic diet is a very roundabout way of treatment, but that the desired alkali in combination with an organic acid is much more logical — sodium lactate, for instance. These are changed in the blood into the corresponding carbonates. In view of the diminished coagulability of the blood and the hemic and joint lesions consequent in them, the giving of lime and orange juice is somewhat contra-indicated.

[J. B. H.]

Deutsche Medizinische Wochenschrift. No. 42.

Oct. 15, 1908.

1. *Tillmanns, H. *The Treatment of Pelvic Abscesses.*
2. Strubell, A. *Diagnosis of Functional Ability and Treatment of Cardiac Diseases.*
3. Gierlich. *The Symptomatology of Tumors of the Cerebellum and of the Cerebello-Pontine Angle.*
4. Henneberg. *Report on Congenital Dermatogenous Contracture of the Little Finger Joints occurring in One Family.*
5. v. Hippel, A. *The Present Status of the Pneumococcus Serum Therapy of Corneal Ulcer.*
6. Grasmann, M. *The Treatment of Carbuncle.*
7. *Mendelsson, O. *The Treatment of Infantile Eczema according to the Method of Finkelstein.*
8. Mühsam, H. *A New Method of Obtaining Blood for Serodiagnostic Purposes.*

1. Tillmanns enters exhaustively into a description of all the different possibilities in pelvic abscesses, taking them up from the point of view of their origin and their anatomical relation. Also he traces the lines of least resistance along which the pus may burrow. He shows how the pus may extend down to the knee or up through the diaphragm, and how there is hardly any spot between into which the abscess may not break. He then takes up the method of treating these abscesses in the pelvis and in detail describes the technic of operating upon some of them.

7. That diet plays an important part in the treatment of general eczema in infants was early considered when it was suggested to replace the milk diet with vegetables. Finkelstein considers that too much whey salt causes the inflammation of the skin. By limiting the salt taken in, that which is present is firmly bound in use within the body, and there is none left to irritate the skin. He suggests a special diet of whey, gruel, curds. In this the whey is in part replaced by the gruel. He reports favorably on its use in cases of eczema. Mendelsson in his cases has used this principle, only he has gone a step further. He leaves the whey salt out entirely. His results have been very satisfactory. The patients lose weight up to a certain point, and one baby had catarrh of the bowels, but presumably not due to this cause, he claims. This treatment is especially adapted to fat children.

[C. F., Jr.]

Münchener Medizinische Wochenschrift. No. 40.

October 6, 1908.

1. Kehr, H. *Operative Results in the Treatment of Cholelithiasis.*
2. Dietelu, H. *Orthodiagraphic Observations on Changes in the Size of the Heart in Acute Infectious Diseases, Exudative Pericarditis, and Paroxysmal Tachycardia.*

3. MAY. *The Action of the Römer Pneumococcus Serum in Croupous Pneumonia, with Special Consideration of the Leucocytes.* (Continued article.)
4. ALEXANDER, A. *Gastric Carcinoma due to Achylia.*
5. HÖRRMANN, A. *Untoward Symptoms in Lumbar Anesthesia.*
6. ENGELS, F. *Two Cases of Ephemeral Pneumonia.*
7. POLLATSCHEK, R. *A Case of Abortive Pneumonia.*
8. ACH, A. *Contributions to the Surgical Instrumentarium. II. Automatic Abdominal Retractors and Automatic Mouth-Gags.*
9. STRAUSS, A. *An Open Photographic Dosimeter for X-Ray Therapy.*
10. KRAUTSCHNEIDER, K. *A New Method of Subcutaneous Serum Injection.*
11. DÜHRSSEN, A. *The Vaginal Cesarean Section in General Practice.*
12. HOFFMAN, R. *The Influence of Fulguration on the Vital Capacity of Cells. Remarks on v. Wasielewski's and Hirschfeld's Article.* (*Münchener Medizinische Wochenschrift. No. 37.*)

ZEITSCHRIFT FÜR KLINISCHE MEDIZIN.

BD. 66. HFT. 3 AND 4.

1. STAEHELIN, R. *Respiratory Exchange and Heat Production after the Taking of Food.*
2. STAEHELIN, R. *The Respiratory Exchange of a Consumptive during Night Sweats.*
3. *FABER, K., AND LANGE, G. *The Pathogenesis and Etiology of Chronic Achylia Gastrica.* (Concluded.)
4. ERBEN, F. *The Chemical Composition of Leukemic Blood.*
5. *ADLER, M. *Fat Absorption under Pathological Conditions in Man and Animals.*
6. *STEENSMA, F. A. *The Function of the Kidneys as Disclosed by the Freezing Point under Normal and Pathological Conditions.*
7. *BORCHARDT, L. *Glycosuria following the Injection of Pituitary Extract.*
8. WECHSELMANN, W. AND HIRSCHFELD, H. *A Case of Acute Lymphatic Leukemia with Peculiar Cell Inclusions.*

3. Chronic gastric achylia is commonly regarded as a functional disease due to nervous influences. Faber and Lange, however, have examined the stomachs of twelve patients with achylia and found undoubted inflammatory changes in the mucous membrane in all of them. They prevented post-mortem softening by the injection of formalin into the abdominal cavity immediately after death. Their cases were partly secondary to tuberculosis of the lungs, diabetes, nephritis and alcoholism. The rest were without evident etiology. Several of them showed no decided symptoms on the part of the stomach during life. The presence of an excess of mucus in the gastric contents, which has been regarded as a *sine qua non* for the diagnosis of chronic gastritis, was noted in only one quarter of their cases. In view of their own findings, and of the fact that no case of chronic achylia has been reported which has shown a normal mucous membrane on post-mortem examination, they conclude that this symptom is due, not to functional disturbances, but to chronic gastritis. They admit, of course, that a *transitory* failure of gastric secretion may be due to functional influences. The failure of secretion, however, is not always due to a destruction of the secreting glands, because a large proportion of their cases showed the gland substance to be preserved. This, however, does not militate against the supposition that the achylia was due to the inflammatory changes, for a lack of function is not necessarily associated with evident lesions of the secreting cells. Achylia due to gastritis is not necessarily an uncurable affection, if the cause can be removed, for in a case of bothriocephalus anemia, in which recovery followed the expulsion of the worm, the gastric secretion gradually returned. The authors further report investigations on the etiology of forty-six other cases of achylia without post-mortem examination, and found that the great majority were in patients over forty years of age. In a large proportion of these they could find no other cause than defective or diseased teeth, to which they ascribe a great importance in the etiology.

5. From observation of a single case of defective fat absorption, M. Adler concludes that extraction with chloroform gives the same values for fat as does extraction with ether. If this is true, the chloroform method is greatly preferable, taking only about one twelfth the time. He also found that the addition of extra fat to the diet in the form of butter improved the fat absorption. In two other cases he states that this was the case, but does not give the figures for the fat absorption before the addition of butter to the diet. A few experiments on dogs with diarrhea, due to a large excess of fat in the food, showed that the fat splitting was defective and sometimes also the absorption of fat. Both of these factors were greatly improved by the administration of pancreon in doses up to one gram. He also found that in dogs butter and cooked bacon were better absorbed than raw bacon.

6. Steensma shows that the formulas of Koranyi and Claude and Balthazard for estimating the functional activity of the kidney possess no intrinsic value and do not show more than a quantitive determination of urea and sodium chloride.

7. Borchardt was able in rabbits to produce a temporary glycosuria by the injection of extract of the pituitary gland. In dogs glycosuria was less constant. The sugar excreted was dextrose and was small in amount. He considers that the glycosuria was not due to the presence of adrenalin in these extracts, because they did not give the reaction with ferric chloride, although they did produce a dilatation of the pupil when applied to the enucleated frog's eye. In view of these findings, and the fact that about 40% of the cases of acromegaly are complicated with glycosuria, he considers it probable that hyperfunction of the pituitary gland is the cause of glycosuria in acromegaly. It is unlikely that glycosuria in this disease is due simply to pressure on a sugar center in the brain, for tumors of the pituitary not accompanied by acromegaly never are complicated with glycosuria. [W. T.]

REVUE DE CHIRURGIE.

OCTOBER, 1908.

1. *DUVAL, P. *Submalleolar Amputation with Calcaneo-Tibial Osteoplasty.*
2. BALL, V., AND ALAMARTINE, H. *Hypertrophic Osteo-arthropathies of Tuberculous Origin in Man and in the Dog.*
3. *LE DAMANY, P. *The Rational Treatment of Congenital Dislocation of the Hip.*

1. Duval describes, with lucid illustrations, the technic of his modification of Guyon's procedure for osteoplastic tibio-calcanean amputation, for which he claims the advantages that it employs as a skin-flap the perimalleolar instead of the plantar tissues, and as a bone-flap the posterior instead of the inferior portion of the os calcis, and is, therefore, better suited than any other method to the treatment of fungous tibio-tarsal and subastragaloid osteo-arthritides.

3. Discussing and comparing various positions of fixation for the femur after reduction of congenital dislocation of the hip, Le Damany states his belief that the desideratum is to restore and maintain good reciprocal orientation of the constituent parts of the articular skeleton without torsion of the femur or anteversion of its neck, combined with reasonable mobilization of the joint during treatment. The mechanics of his theorem are well explained by diagrams. [R. M. G.]

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Obituaries.

WILLIAM M. MERCER, M.D.

THE recent death of Dr. William M. Mercer, of Pittsfield, evinces that no greater evidence of a well-spent life can present itself to us than the universal approval of public sentiment that our efforts have left their impress upon the advancement of our time. This may be said to pertain especially to the honorable career of Dr. William M. Mercer, who died at Pittsfield on the tenth day of June, 1908, after a long successful life spent in the practice of his profession. He came to Pittsfield when a young man and resided there for more than forty years, coming shortly after his graduation from Harvard and entering at once upon the duties of his profession, which he continued up to the time of his death.

Dr. Mercer was truly of that older school of physicians, a class of men admired increasingly as the years go by, the limitations of whose activities geographically were the boundaries of the entire county, in whom extraordinary emergencies had imposed great self-reliance; withal, they possessed at all times a keen conception of high professional ideals. Those who knew Dr. Mercer longest and best speak strongest of his sterling qualities both as physician and citizen.

There comes to all of us more or less obligation, diffidently though we accept it, calling forth our loyal interests in the civic duties of our several communities. More especially was this true of times past. Dr. Mercer for thirty-six years responded to this duty in his long, able membership of the School Board of Pittsfield and his further association in the government of Pittsfield long before it became a city.

Whereas, The Berkshire District Medical Society always found in Dr. Mercer an active, earnest co-worker, having served for many years on its board of officers,

Resolved, That by his death the society loses one of its influential number, the profession one of its able members, and Pittsfield one of its honored citizens;

Resolved, That we, the members of the Berkshire District Medical Society, in meeting assembled, this 29th day of October, 1908, recognizing our loss in the death of Dr. William M. Mercer, direct that the above expression of our feelings be entered upon the records of the society; and be it further,

Resolved, That a copy of the above be forwarded to the family of the deceased, and to the Boston Medical and Surgical Journal.

O. S. Roberts, M.D.,
W. W. Leavitt, M.D.,
J. J. Hassett, M.D.,
Committee.

◆

HORACE M. HOLMES, M.D.

Dr. Horace M. Holmes, aged eight-one, member of The Massachusetts State Medical Society, died at his home in Adams, Mass., May 3, 1908. He was son of Jesse C. and Orinda (Oakes) Holmes and was born in Waterville, Vt., Nov. 2, 1826.

He was educated in the Vermont schools, completing his academic course at the Bakersfield Academy. After graduation he taught successfully in the West till he began the study of medicine with the late Professors H. H. and T. Childs, of Pittsfield, Mass., attending lectures at the old Berkshire Medical College, from which he was graduated in 1852. A year later he located in Adams, where for a period of fifty-five years he was actively engaged in the practice of his profession.

In 1855 Dr. Holmes was married in Pittsfield to Helen C., daughter of Merrick and Susan (Bigelow) Ross. His wife died in 1880, and in 1896 he married Mary B. Reynolds, daughter of Captain Edward B. Reynolds, of San Francisco. Mrs. Holmes and the two children of his first wife, Mrs. Jesse R. Legate and Dr. Harry B. Holmes, survive him.

Dr. Holmes was a man of high ideals and he lived up to his convictions. Anything bordering on empiricism was most distasteful to him and the charlatan he *could not and would not tolerate.*

His life was strictly exemplary and he held a place in the estimation of the community such as few men hold, being respected and loved by all with whom he came in contact.

He was an active worker in the church. He was president of the Berkshire District Medical Society in 1881 and 1882. For many years he served his town as health officer, school committeeman and town physician. In 1878 and 1879 he was elected to the legislature from the towns of Adams and North Adams and served on the Committee on Public Health.

The Berkshire District Medical Society mourns the death of Dr. Holmes and resolves to honor and cherish his high ideals and to profit by his exemplary life.

It resolves also to spread a copy of this sketch upon its records, send a copy to the bereaved family and a copy to the Boston Medical and Surgical Journal for publication.

Orland. J. Brown, M.D.
J. H. Matte, M.D.
W. W. Scofield, M.D.

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ELIPHALET WRIGHT, M.D.

Dr. Eliphalet Wright, the oldest physician in Berkshire County, died at Lee, Mass., on the 20th day of August, 1907, at the age of ninety years and four months.

He was born at Hinsdale, Mass., in 1817, graduated from the Berkshire Medical College in 1841, and had practised in Lee for more than sixty-five years.

During all of this long period he led the life of a busy practitioner and yet he retained his physical and mental vigor in a remarkable degree and continued in the active practice of his profession until within five days of his death.

Dr. Wright was a member of The Massachusetts Medical Society from 1852 to 1888. For some years after the latter date he seldom attended medical meetings, but during the past three years he became one of the most regular attendants upon the meetings of this Society and evidently enjoyed them greatly. He never lost interest in medical matters and took great pride in his ability to continue work at so advanced an age.

Dr. Wright was a good man and a good citizen. His death brings sorrow to a large circle of friends, many of whom had know him from their childhood, and especially to the people of Lee, where his whole professional life was spent.

By his medical brethren in Berkshire County he is sincerely mourned, but we rejoice in his long, useful career and are glad he was spared the decrepitude of old age and was given strength to minister to the sick until his summons came.

J. F. A. Adams, M.D.,
W. W. Leavitt, M.D.,
N. T. Wakefield, M.D.,
Committee.

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CHARLES CLIFFORD HOLCOMBE, M.D.

Dr. Charles Clifford Holcombe died at his home in Lee, Feb. 1, 1908, aged seventy-eight years.

He was born in 1830, at West Granville, Mass., graduated from the Yale Medical School in 1850, practised a few years in Westfield, Mass., and removed in 1854 to Lee, where he lived for fifty-four years. He was engaged in active practice during the whole of this long period, except the last six years, when failing health had obliged him to retire.

He became a member of The Massachusetts Medical Society in 1855, held the office of president of the Berkshire District Medical Society, was medical examiner for many years, and had served on the Lee Board of Health.

His standing as a citizen is indicated by the fact that he was for thirty years a director of the Lee Library Association, for twenty-seven years a director of the Lee National Bank, and for nearly ten years its president.

He was an accomplished and successful practitioner of medicine and a gentleman of culture and refinement.

The members of the Berkshire District Medical Society desire to express their sorrow at the death of their venerable and respected associate.

J. F. A. Adams, M.D.,
G. P. Hunt, M.D.,
E. W. Markham, M.D.,
Committee.

◆

Miscellany.

HOW TO CARE FOR THE MOUTH AND TEETH AND WHY.*

The Dental Hygiene Council of Massachusetts, of which Dr. Evan P. Wentworth, 419 Boylston Street, is secretary, is making a commendable attempt to educate the public regarding the care of the mouth and teeth. The following statement has been prepared for distribution in the public schools, among parents and others who are likely to benefit by it:

It has been shown that general health depends largely upon the condition of the mouth and teeth. In order to cause this fact to be generally appreciated, the Dental Hygiene Council appeals to the teachers in our schools, to the parents of our children, to physicians, dentists, nurses and all others interested in the physical welfare of the nation, to assist in the spreading of this knowledge. Because diseased teeth are painful to chew with, food is swallowed without mastication and indigestion results. The body cannot be properly nourished when the food is not properly digested. Diseased teeth give rise to pain of acute or chronic character, frequently mistaken for neuralgia. A large per cent of the so-called facial neuralgias are caused by decayed teeth. Suffering from diseased teeth, no child can study well, nor can an adult attend properly to his business. Ears and eyes are often affected by diseased teeth. Sometimes the ears and eyes are treated a long time before the real cause of the trouble is found. As a result of diseased teeth, pus is discharged into the mouth. This is swallowed and may poison the entire body. Pus added to his daily food would tend to make a child susceptible to disease. His strength and vitality will be lowered so that he will not be able to resist illness.

Nearly all disease germs enter the body by way of the mouth, and we cannot avoid taking them in. If the teeth are decayed and broken down, if masses of food are left in tooth cavities, between teeth and along the margins of the gums, the bacteria which get into the mouth will have a fine chance to multiply until they are able to produce disease. Bacteria are microscopic plants (not animals), and they need soil to grow in just as the larger plants need earth. Food particles in neglected tooth cavities furnish the necessary soil. Get rid of the food and you will reduce the number of bacteria and the chances of disease. It is believed that one reason for the rapid spread of contagious diseases among the poor is that their mouths are not kept clean. Decay of the tooth is due to bacteria. The bacteria which act upon the teeth are known as the lactic acid bacteria. When they are mixed with starchy food or sugar they cause fermentation, and lactic acid is produced. This acid dissolves the enamel of the teeth and starts the process of decay. Decay seldom occurs on smooth surfaces of the teeth, but in the out-of-the-way places, where food lodges, it goes on rapidly. Greater care in removing food will prevent a great deal of decay. Some teeth are better shaped or more regular and have better enamel than others, and so are more resistant to decay, but cleanliness will do much to preserve and strengthen the weaker teeth.

At two and a half years the child should have twenty teeth — never more. These temporary teeth are almost always regular. They need the same care as the permanent teeth, and the reason is obvious. If they are painful the child will not eat properly; improper or insufficient nutrition has a more serious effect upon a growing child than upon an adult. All the reasons for caring for the adult's teeth apply to the care of the temporary teeth. When the child is five and a half years old, four permanent teeth come in. They do not push any temporary teeth out, but come in behind the last temporary molars. They are known as the sixth-year molars. These teeth are often mistaken for temporary teeth and are sadly neglected. They should have special care, for they are really the most valuable teeth in the mouth, and should be made to last a lifetime. Count the child's teeth and if there are more than twenty, you may be sure that the first permanent molars have arrived. Then care for these if you have to neglect all the rest. From the seventh to the twelfth year temporary teeth are coming out and permanent ones are coming in, and the mouth needs great care and careful inspection. This inspection by the dentist should begin when the child is three years old and continue through life. It is impossible to say how often an examination by the dentist should be made. It is never wise to leave it more than six months, and where the teeth decay rapidly, it would be a great saving if an inspection could be made every month or two. Teeth could then be filled when the cavities are small and serious trouble could be prevented. If the filling is neglected until the tooth aches, the operation is long and painful and never as successful as when the tooth is filled at the beginning of decay.

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We would urge teachers and parents to remember and to endeavor to teach the children that our teeth are not merely for ornament, but that they must be used to cut and grind the food and mix it with saliva, and that failure to use the teeth must result in indigestion and a badly nourished body and brain. It should be understood that teeth should last to the end of life, and that artificial teeth, while most useful, are not nearly as strong or good for mastication as the natural teeth. Well-chewed food is half digested, and the teeth should be preserved to preserve health. Decay of the teeth is the most prevalent of existing diseases and does infinite harm to the health of the child, but its suppression is possible without great expense. Starchy foods and sweets, if allowed to remain in the mouth, will develop acids and cause decay; therefore, brush the teeth after eating. Brush after every meal if possible, but always brush them after breakfast and at bedtime. Use a small brush, and brush down on the upper teeth and up on the lower. Do not brush across the teeth, as by this method the gums are pushed away from the teeth and grooves are worn at the necks near the gums. Draw the gum toward the teeth and do not push it away. A fine powder used once a day is a help in keeping the teeth well polished, and if economy is practiced, a few cents' worth of precipitated chalk will be found a most satisfactory powder. It is a good plan to brush the teeth before a mirror. Children and adults complain that it takes too much time to brush the teeth. If a watch is consulted, it will be seen that less than two minutes are sufficient to cleanse the teeth thoroughly. We do not usually take a full minute. Silk is useful, but the patient should be instructed in its use by the dentist, and mouth-washes should be used only when prescribed by the dentist. Few mouth-washes are suitable for all people, but a pleasant and harmless wash will often induce children to brush their teeth if it does no other good.

All who have the care of children should notice carefully if they breathe through their mouth, and whenever the habit of mouth-breathing is discovered, whether it be indulged in by the day or by the night, an examination should be made to discover the cause. Some obstruction will usually be found to exist, and its removal will work wonders in building up the health of the child. Children who breathe through the mouth are not getting enough oxygen. They are starving for air. Mouth-breathing often leads to serious irregularities of the teeth. Infants should not be allowed to suck their thumbs. Mouth-breathing and irregular teeth usually result, and the habit should be broken at any cost. Children should be allowed to eat slowly.

Children naturally eat slowly, but the hurry and confusion, so common at meal time, forces them into the habit of eating rapidly. Give them a chance, and don't let them wash down their food with water. Insist that they eat slowly, and in time they will acquire or return to the habit. The teeth and the jaws need exercise for their perfect development just as much as the arms, and the polishing the teeth receive when the food is masticated thoroughly helps to keep them clean and prevent decay. When irregularities of the teeth exist, it is generally wise to have them corrected, for not only is the appearance of the child improved, but he is better able to masticate his food when his teeth are in their right position.

The Dental Hygiene Council asks the help of those who have the welfare of children at heart in carrying into effect these simple suggestions.

RESOLUTIONS ON THE DEATH OF CHARLES AYER CLOUGH.

THE Board of Trustees of the Massachusetts Hospital for Epileptics has passed the following resolution:

That the Massachusetts Hospital for Epileptics has met with a serious loss in the death of Charles Ayer Clough, of Groton, who had been secretary of the Board of Trustees since the founding of the hospital. Mr. Clough was most valuable as a trustee because of his thorough knowledge and personal experience of hospital administration and hospital requirements, his wise and broad judgment and his loving nature and widely charitable disposition. He judged no one harshly, he was kindly to all, yet he was neither weak nor timid in his decisions, which were the result of unusual experience and of sound common sense. His fellow trustees feel his death as a personal loss to each one of them. Those who knew him best valued him most highly and loved him most.

Correspondence.

CIRCUMCISION IN EGYPT IN 1645.

BOSTON, MASS., Nov. 23, 1908.

Mr. Editor: While engaged recently in some historical researches, I consulted among other works the *Journal des Voyages de monsieur Monconys*, published at Lyons in 1645. In it were a number of remarks relating to medicine which are of interest. Among other things, he speaks of the goiter in the Alps, and says that it is not due to the water, because many who drink the water do not develop the affection, a fact well proven to-day.

While visiting Leyden, he met a well-known scientist who told him that the origin of syphilis was eating bad fish, but what is of particular interest is his description of the operation of circumcision as he witnessed it in Egypt. I will give a literal translation of what he has to say on the subject, and this is my excuse for the somewhat crude English there is to follow:

"I saw three children circumcised, two being from fourteen to fifteen years of age, who, incontinent after having been cut, went away alone on foot to a neighboring house; they were first made to ride about the city on well-harnessed and beautiful horses, and they [the children] were well dressed; a piece of sugar was placed in their mouths to prevent them from crying out, and a man took them on his knees and held their body and arms, then the surgeon seized the prepuce, and having drawn well out from the glans, he inserted a little stick [probably a probe], sweeping it completely around so as to well develop the glans [breaking up the adhesions], then with pincers he compressed that part of the prepuce which extended beyond the glans and holding the end he carefully cut with his razor the prepuce which was between his hand and the pincers."

From the above account it is evident that the Egyptian surgeon of 1645 employed the ordinary clamp operation as done to-day.

Very truly yours,
CHARLES G. CUMSTON, M.D.

RECORD OF MORTALITY

For the Week ending Saturday, Nov. 14, 1908.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	—	—
Chicago	565	130	Waltham	3	0
Philadelphia	483	110	Pittsfield	6	1
St. Louis	—	—	Gloucester	9	1
Baltimore	198	53	Brookline	7	1
Cleveland	—	—	North Adams	4	1
Buffalo	—	—	Chicopee	7	2
Pittsburg	—	—	Northampton	5	1
Cincinnati	—	—	Medford	5	—
Milwaukee	—	—	Beverly	3	—
Washington	—	—	Leominster	7	1
Providence	—	—	Hyde Park	3	1
Boston	221	58	Melrose	0	—
Worcester	34	8	Newburyport	6	1
Fall River	33	13	Woburn	2	0
Cambridge	27	3	Westfield	10	2
Lowell	35	11	Marlboro	3	1
Lynn	27	4	Revere	1	—
New Bedford	32	9	Attleboro	2	0
Springfield	22	5	Peabody	—	—
Lawrence	30	9	Adams	4	2
Somerville	23	8	Clinton	2	0
Brockton	6	1	Gardner	4	2
Holyoke	22	12	Milford	2	0
Malden	11	5	Watertown	0	—
Chelsea	10	4	Plymouth	—	—
Newton	9	—	Weymouth	2	1
Salem	16	2	Framingham	3	—
Haverhill	17	—	Southbridge	2	1
Fitchburg	9	2	Wakefield	—	—
Everett	11	0	Webster	—	—
Taunton	10	3	Arlington	3	2

LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND OTHER OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDED NOV. 11, 1908.

Stoner, Geo. W., surgeon. Granted leave of absence for five days from Oct. 23, 1908.

Clark, Taliaferro, passed assistant surgeon. Directed to proceed to Schuylkill Haven, Pa., for the purpose of examining an insane alien. Oct. 31, 1908.

Clark, Taliaferro, passed assistant surgeon. Directed to proceed to points in Pennsylvania, New Jersey and Delaware for the purpose of making medical examination of aliens. Nov. 5, 1908.

Clark, Taliaferro, passed assistant surgeon. Reassigned to duty at Philadelphia, Pa., to date from July 19, 1908.

Lavinder, C. H., passed assistant surgeon. Granted leave of absence for two days from Oct. 30, 1908, under paragraph 191, Service Regulations.

Grubbs, S. B., passed assistant surgeon. Directed to proceed to New York upon completion of duties in Paris, France. Nov. 9, 1908.

Billings, W. C., passed assistant surgeon. Directed to proceed to Arundel Cove, Md., and report to Commanding Officer of the Revenue Cutter "Itasca," for duty. Nov. 3, 1908.

Schereschewsky, J. W., passed assistant surgeon. Reassigned to duty at Baltimore, Md., to date from Nov. 2, 1908.

Frost, W. H., assistant surgeon. Upon being relieved by passed assistant surgeon W. C. Billings, directed to proceed to Washington, D. C., and report at Hygienic Laboratory for temporary duty.

Stiles, C. W., chief division zoology, Hygienic Laboratory. Detailed to represent the Service at the meeting of the Southern Medical Association, Atlanta, Ga. Nov. 10–12, 1908.

Abbott, F. C., acting assistant surgeon. Leave of absence for fourteen days, granted Oct. 13, 1908, amended to read seven days from Oct. 11, 1908.

Alexander, E., acting assistant surgeon. Granted leave of absence for fourteen days from Nov. 6, 1908.

Bailey, C. A., acting assistant surgeon. Directed to proceed to St. John, N. B., on or about Nov. 19, 1908, for medical examination of aliens.

Brinckerhoff, W. R., acting assistant surgeon. Directed to proceed to Molokai Leprosy Investigation Station as often as the public business requires.

Carter, P. I., acting assistant surgeon. Granted leave of absence for seven days from Oct. 26, 1908, under paragaph 210, Service Regulations.

Fahey, Edw. W., acting assistant surgeon. Granted leave of absence for nineteen days from Nov. 12, 1908.

Fisher, C. E., acting assistant surgeon. Granted leave of absence for ten days from Nov. 6, 1908.

Gill, S. G., acting assistant surgeon. Granted leave of absence for twenty-eight days from Dec. 4, 1908.

Goldthwaite, Henry, acting assistant surgeon. Granted leave of absence for twenty-one days from Nov. 5, 1908.

Gustetter, A. L., acting assistant surgeon. Granted leave of absence for ten days from Nov. 15, 1908.

Hughes, C. W., acting assistant surgeon. Granted thirty days' leave of absence from Nov. 5, 1908.

Hume, Lea, acting assistant surgeon. Granted leave of absence for ten days from Oct. 24, 1908.

Hume, Lea, acting assistant surgeon. Granted extension of leave of absence for ten days from Nov. 3, 1908.

Jackson, James M., Jr., acting assistant surgeon. Granted leave of absence for thirteen days from Nov. 9, 1908, and leave of absence for eight days without pay from Nov. 22, 1908.

Kimmet, W. A., acting assistant surgeon. Leave of absence for thirty days, granted Sept. 16, 1908, amended to read twenty-five days from Sept. 20, 1908.

Lyall, R., acting assistant surgeon. Granted leave of absence for three days without pay from Nov. 3, 1908.

Nute, Albert J., acting assistant surgeon. Granted extension of leave of absence for one day, on account of sickness, Nov. 6, 1908.

Onuf, B., acting assistant surgeon. Leave of absence for twenty-seven days from Nov. 1, 1908, granted Oct. 22, 1908, amended to read twenty-seven days from Nov. 4, 1908.

Ryder, L. W., pharmacist. Granted leave of absence for four days from Nov. 2, 1908.

Ryder, L. W., pharmacist. Granted extension of leave of absence for two days from Nov. 6, 1908.

BOARDS CONVENED.

Board of medical officers convened to meet at the Marine Hospital, Baltimore, Md., Nov. 4, 1908, for the purpose of conducting a physical examination of an officer of the U.S.R.C.S. Passed Assistant Surgeon J. W. Schereschewsky, chairman; Passed Assistant Surgeon J. T. Burkhalter, recorder.

Board of medical officers convened to meet at the Marine Hospital, Seattle, Wash., for the purpose of examining alien Joseph Elia. Passed Assistant Surgeon M. W. Glover, chairman; Assistant Surgeon C. W. Chapin, recorder.

RECENT DEATH.

Dr. John S. Van Mater, for fifty years a practising physician in New Brunswick, N. J., died at his home in that city on Nov. 20, 1908, at the age of seventy-two years.

BOOKS AND PAMPHLETS RECEIVED.

Surgery, Its Principles and Practice. By various authors. Edited by William Williams Keen, M.D., LL.D., and John Chalmers Da Costa, M.D. Vol. IV. Illustrated. Philadelphia and London: W. B. Saunders Co. 1908.

Treasury Department. Public Health and Marine-Hospital Service of the United States. Transactions of the Sixth Annual Conference of State and Territorial Health Officers with the United States Public Health and Marine-Hospital Service. Washington, D. C., April 27, 1908.

Ticks. A Monograph of the Ixodoidea. By George H. F. Nuttall, M.A., M.D., Ph.D., Sc.D., F.R.S., and others. London: Cambridge University Press. New York: G. P. Putnam's Sons. Part I. October, 1908,

On Infantilism from Chronic Intestinal Infection. By C. A. Herter, M.D. New York: The Macmillan Co. 1908.

Uretero-Vesical Implantation. A New Method of Anastomosis with Report of Cases. By R. L. Payne, Jr., M.D. Reprint.

Atlas of Clinical Surgery. With Special Reference to Diagnosis and Treatment. For Practitioners and Students. By Dr. Ph. Bockenheimer. English adaptation by C. F. Marshall, M.D., F.R.C.S. Illustrated. In three volumes. Vols. I, II & III. New York: Rebman Co. 1908.

Diseases and Surgery of the Genito-Urinary System. By Francis S. Watson, M.D., assisted by John H. Cunningham, Jr., M.D. In two volumes. Vols. I & II. Illustrated. Philadelphia and New York: Lea & Febiger. 1908.

Principles and Practice of Physical Diagnosis. By John C. Da Costa, Jr., M.D. Illustrated. Philadelphia and London: W. B. Saunders Co. 1908.

Original Articles.

THE METHOD OF ADMINISTERING ANTIMENINGITIS SERUM.

BY CHARLES HUNTER DUNN, M.D., BOSTON.

The value of serum therapy in epidemic cerebrospinal meningitis has been a subject for discussion for more than a year; in fact, ever since the antiserum prepared by Flexner at the Rockefeller Institute for Medical Research has been in use. While almost all of those who had experience with the serum were soon impressed with its evident marked effect upon the symptoms and course of the disease, positive conclusions could not be drawn from a comparatively small number of cases. Even when continuously favorable reports were being received from a number of observers in widely separated localities, Dr. Flexner was unwilling to admit that the value of the serum treatment could be considered proved and waited until he should receive reports from a greater number of cases. Now, however, these reports have been received, and convincing proof of the value of this treatment has been offered by Flexner and Jobling in a recent publication,[1] which contains an analysis of 400 cases of epidemic meningitis treated with the antimeningitis serum. The conclusions of the authors are as follows: " It is our belief that the analyses of histories of cases of epidemic meningitis which have been presented in this article furnish convincing proof that the antimeningitis serum, when used by the subdural method of injection, in suitable doses and at proper intervals, is capable of reducing the period of illness; of preventing, in large measure, the chronic lesions and types of the infection; of bringing about complete restoration to health in all but a very small number of the recovered, thus lessening the serious, deforming and permanent consequences of meningitis, and of greatly diminishing the fatalities due to the disease."

Acting upon a suggestion recently made to me by Dr. Flexner, it is my purpose in this paper to call attention to the words " when used by the subdural method of injection, in suitable doses and at proper intervals " contained in these conclusions. It has been convincingly shown that the results to be expected from the use of the serum are, to a considerable extent, dependent upon the period in the course of the disease when serum treatment is begun, and upon the initial severity of the case. My own experience with the use of the serum in 57 cases of epidemic meningitis has lead me to believe that the results are also largely dependent upon the method of administering the treatment.

NECESSITY OF USING SUBDURAL INJECTION ONLY.

The technic of the actual injection of the serum has been sufficiently described in the various publications of the last year.[2] Yet there may still be some who do not fully realize the necessity of giving the serum by subdural injection, and who might be tempted to waste valuable time, or even to nullify its effect, by attempting to use it by the method of subcutaneous injection employed with diphtheria antitoxin. The efficacy of the serum depends directly upon its concentration. The reason of its efficacy is found in the site of the disease. In epidemic cerebrospinal meningitis, the site of the disease is bathed in the cerebrospinal fluid, which fact fortunately permits us by subdural injection to apply the serum in a concentrated form exactly where it is needed. If the serum is injected subcutaneously, it is so diluted by absorption into the general circulation that all the good effect of concentration is lost. Moreover, it does not pass readily from the blood into the cerebrospinal fluid. As a consequence of these facts, no good result may be expected from the subcutaneous method of injection.

In the earlier days of my experience with the serum I used the subcutaneous method in a small number of cases. These were cases in which no cerebrospinal fluid could be withdrawn by lumbar puncture, and at that time I did not dare to give a subdural injection of the serum without the previous withdrawal of cerebrospinal fluid for fear of bad results from the increase of intradural pressure. For this reason subcutaneous injections were tried, and in none of these cases were there any of those effects which so strikingly follow the subdural injection of the serum. Later, when the good results of subdural injections became more and more manifest, it appeared to me that the risk of danger from increased intradural pressure was well worth taking and I have frequently injected the serum into the spinal canal in cases where no fluid was obtained. In but one case has any noticeable disturbance followed this practice, the case of a very young baby, in which the injection of the serum was followed by a temporary collapse, with cyanosis, irregular respiration and weak pulse, but in which complete recovery occurred. The number of cases in which no cerebrospinal fluid can be obtained is so very small that this question does not often arise and consequently positive conclusions cannot yet be drawn. My present belief is that the danger to be apprehended from increased intradural pressure in these cases is small in comparison with the danger to be apprehended from not giving the serum by subdural injection, and consequently that the method of subdural injection should be used in all cases.

I have touched upon this side of the subject only because I have recently been often addressed with questions as to the possibility of using subcutaneous injections of the serum. My principal purpose is to discuss the doses, the intervals between doses and the indications for and frequency of their repetition.

When the serum first came into use it was in an experimental stage. Its users had no positive information on these points. We only knew that a maximum dose of 30 ccm. had been used, and that sufficient cerebrospinal fluid should first be removed to make room for the serum injected. A good deal of the earlier use of the serum was experimental, and we tried various doses and various intervals of repetition. Gradually these experiments have lead to the formation of a conception of a proper method, the best method of using the serum.

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[1] Jour. of Exp. Med., vol. x, No. 5, September, 1908.

[2] Boston Med. and Surg. Jour., vol. clviii, No. 12, pp. 370-379, March 19, 1908.

THE SIZE OF THE DOSE.

First, as to the size of the dose. In the earlier days of the use of the serum the rule was to inject a quantity of serum no greater than that of the cerebrospinal fluid withdrawn up to a maximum of 30 ccm. It soon began to appear that those cases in which only small amounts of cerebrospinal fluid could be obtained by lumbar puncture, and in which only small doses of 10, 15 or 20 ccm. were given, did not do so well as the cases in which full doses of 30 ccm. could be given. So marked did the difference appear that I became convinced that the benefits to be derived from larger doses were great enough to counterbalance the possible risk of increasing the intradural pressure and I began to use larger doses, even in cases where only very small amounts of cerebrospinal fluid could be obtained. Up to the present time this practice has resulted in no disturbance, except in the one case referred to above. I then raised the maximum dose, in cases in which plenty of cerebrospinal fluid could be obtained, to 45 ccm. without bad effects. Doses of 30 ccm., in most cases, appeared to give sufficiently good results, but doses of less than 30 ccm. appeared almost constantly to give less good results.

My present belief is that the larger the dose the better is the result, and that as large a dose as possible should be given in all cases. The limit is still the risk of disturbance from increased intradural pressure, and just how great is that risk, time alone can determine. I believe that 30 ccm. should be a minimum rather than a maximum dose, and that in most cases this quantity can and should be given. The exceptions are found in very young babies, and in a few other cases in which only a small amount of cerebrospinal fluid can be obtained, and in which, on attempting the injection of a full dose, after a certain point further injection appears to encounter an abnormal resistance. This last point of resistance can only be judged fully by practice. After giving a sufficient number of subdural injections, one becomes accustomed to a normal standard of the feeling of resistance and is sensible of any increase above the normal.

In all cases it is absolutely essential to withdraw as much cerebrospinal fluid as can possibly be obtained before injecting the serum. There are two reasons for this: first, so that as large a dose as possibly may be given with the greatest safety, and second, because it is probable that the creation of negative pressure in the upper parts of the cerebrospinal system favors the diffusion of the serum to the remoter parts affected by the disease. It is now believed that the failure of the serum in certain so-called resistant cases is due to a sufficient quantity of the serum not reaching remoter parts, such as the cerebral ventricles, and that the wide diffusion of the serum can be favored by the creation of a comparative degree of negative pressure in these places. It is possible that this diffusion can also be favored by placing the patient with the head low immediately after the injection is given.

After the withdrawal of the cerebrospinal fluid, if the quantity withdrawn is 30 ccm. or under, the routine dose should be 30 ccm. except in case of the exceptions mentioned above. The aim should always be to give 30 ccm. if possible, and a smaller quantity should not be given unless a distinct feeling of resistance is encountered. If the quantity withdrawn is more than 30 ccm., the quantity of serum injected should be equal to the quantity of cerebrospinal fluid withdrawn. In very severe or fulminant cases, especially in adults, in which the quantity of fluid withdrawn is between 30 ccm. and 45 ccm., I believe that 45 ccm. should be given, provided that no sensation of abnormal resistance is encountered.

FREQUENCY OF REPEATING THE DOSE.

A second point in the method of using antimeningitis serum which is under discussion is when and how often should the injections be repeated. Here again the earlier work with the serum was more or less experimental. The majority of cases in which the serum was used early in the course of the disease showed a distinct and often very marked reaction after one dose, this reaction consisting in a rapid fall of temperature and a marked improvement in all the symptoms, particularly in the mental condition, which at times changes within twelve hours from one of unconsciousness to one of complete consciousness. In some of the cases in my series this improvement after one dose was permanent and progressive, and recovery was uninterrupted without further doses being given. In other cases the improvement after one dose was not complete and the condition remained stationary or tended after a time to get worse again. It seemed then that the best method of using the serum would be to repeat the dose at those times when the limit of improvement from from any one dose should have appeared to have been reached, that is, when the condition was stationary or beginning to get worse. I treated a number of cases in this way and it soon appeared that those cases in which there was little immediate improvement, or which early showed a tendency to remain stationary or relapse, in which in consequence frequently repeated doses were given at the outset, did better than those cases in which the initial improvement was more marked and in which in consequence repetitions of the dose were postponed and later strung along at intervals. This method of repeating the dose when the effect is exhausted, of striking at the disease, as it were, each time it attempts to raise its head, is a plausible and attractive method, but I am now convinced that it is not a good one.

I am now convinced that it is better to repeat the injections a number of times at the outset in all cases, and that by so doing the improvement is more likely to be permanent, the course of the disease is more likely to be short, and that the liability to relapse is greatly lessened. As to just how often the dose should be repeated at the outset, the last word cannot yet be said, and for the present the number of repetitions must, to a certain extent, be arbitrary. The best guide is found in the disappearance of the diplococci from the cerebrospinal fluid, although this disappearance is no proof that diplococci have disappeared from all parts of the cerebrospinal tract.

As a routine, I believe that in all cases the injections should be repeated daily so long as diplococci are found in the cerebrospinal fluid, no matter now many doses must be given. The finding of diplococci in cover-slips is a more reliable test than the results of culture, as the ability of the diplococcus intracellularis to grow in cultures is very variable and very easily influenced by the serum, one dose often being sufficient to produce a sterile culture, even when diplococci can be found in the fluid withdrawn at the next lumbar puncture. In cases in which diplococci disappear early from the cerebrospinal fluid, the injections should be repeated daily for four doses. This number four is an arbitrary one, but is based on the experience of a number of observers and, although undoubtedly in some cases fewer might suffice, yet, as one can never know beforehand, I believe four to be the safest number to be used in this class of cases to insure obtaining the most permanent improvement and the greatest freedom from relapse.

I believe also that in certain fulminant or very severe cases the injections should be repeated oftener than once in twenty-four hours. This belief is based on two fulminant cases in my series which ended fatally. In both the first injection was followed by a distinct period of improvement occurring within twelve hours, and in one this improvement amounted to a return to consciousness. In both cases, when I returned in twenty-four hours to give the second injection, the patients were already moribund, having become rapidly worse during the few hours preceding my arrival. On the other hand, in another fulminant case, the second injection was given during the period of greatest improvement, ten hours after the first, and in this case improvement was maintained and complete recovery occurred. I think it very possible that the two fatal cases might have been saved if the injection of the serum had been repeated sooner. The very fact that the effects of the serum appear so soon after its injection is an argument for its more frequent repetition, as a more rapid reaction is more apt to become sooner exhausted in so severe a disease. Therefore, I believe that very severe or fulminant cases should be very closely watched and that the physician should stand by ready to give a second injection the moment the period of initial improvement shows any tendency to cease, and that if they cannot be so watched, or if there is no period of improvement, the injection should be repeated in twelve hours instead of twenty-four.

MANAGEMENT OF PROLONGED CASES.

In some cases, even when the initial treatment has been carried out as outlined above, recovery does not immediately occur. In a few, organisms may continue to be found in cover-slips. In such cases the only treatment is to continue to give daily doses indefinitely until either the diplococci disappear or the disease ends fatally. I have only known one such case. So long as diplococci can be found in the cerebrospinal fluid there is hope for a good result from repeated injections of the serum. The majority of prolonged cases are cases in which treatment has been begun comparatively late in the course of the disease, and in which diplococci disappear, but in which symptoms are not entirely relieved. When such cases are progressing steadily, even though slowly toward recovery, nothing further need be done. When, however, the condition of such patients shows a tendency to remain stationary, with certain symptoms still persisting, or to become worse, then further treatment is indicated. In this connection the persistence of retraction of the head, rigidity of the neck and Kernig's sign is not of great importance, as these symptoms tend to persist longer than others without influencing the final outcome. In some of the most favorable cases they persist long after all other symptoms have disappeared, and their persistence is not an indication for further treatment. When, however, any subjective symptoms, such as pain, or any fever or any abnormality of the mental condition persist, then further treatment is indicated. After the initial course of treatment has been given, one may wait about four days, unless the persisting symptoms are serious, when one should wait only two or three days. Then the injections should be repeated. If diplococci have reappeared in the cerebrospinal fluid, then full doses should be repeated daily until the diplococci have again disappeared. If diplococci have not reappeared, four full doses should be injected on successive days, when one may again wait a few days and then again repeat four full doses, and this routine should be continued as long as the patient's condition is stationary or becoming worse, with fever, subjective symptoms or a mental condition other than full normal consciousness, or until the chronic stage of the disease is fully established.

MANAGEMENT OF CHRONIC CASES.

In the chronic stage the consciousness remains affected, but the temperature is normal and the patient's condition remains indefinitely stationary, with no diplococci in the cerebrospinal fluid. In this stage the serum has appeared to be powerless. I think it is as well, however, even in this stage, to perform occasional lumbar punctures, to know if by any chance diplococci have reappeared in the cerebrospinal fluid, where there would be some hope of good effect from several successive doses. At these times an occasional dose of serum should be given, though little good is to be expected from its use if diplococci are absent.

It is a probability that in some chronic cases there is a condition of chronic hydrocephalus, and it is a question whether this may not be largely responsible for the patient's condition. This would be shown by the fact that at lumbar puncture a considerable amount of fluid is obtained under considerable pressure. When this is the case, I would suggest that the older treatment by repeated lumbar puncture, without the injection of serum, should be tried. The condition is a very serious one and almost the only hope is to keep the pressure reduced as far as possible. I believe that a daily lumbar puncture should be done, withdrawing as much fluid as possible. I cannot base my advocacy of this method on experience, as it has not been used with a sufficient number of cases. In the few cases in which it has been tried no good result appeared. But severe chronic cases are rather hopeless, and I think daily lumbar puncture is worth trying when pressure is high.

MANAGEMENT OF RELAPSES.

In one form of relapse the patients have not become entirely free from symptoms and fever, although they have shown marked improvement before they began to get worse again. The treatment of this form of relapse has been described under prolonged cases, but if the relapse begins while one is waiting four days, treatment should be begun at once. In another form of relapse, a true relapse, the patient has been without fever or important symptoms, when he becomes worse, either by a rise of temperature, a recurrence of symptoms or both. Cases in which a rise of temperature is the only manifestation are not nearly so serious as those in which there is a recurrence of any affection of the mental condition. The latter is quite serious, especially if there is no fever or reappearance of diplococci, and may be the precursor of the unfavorable chronic stage.

The treatment of a true relapse is the same as that of the form described under prolonged cases,—immediate lumbar puncture and injection of full doses of serum, the injections to be repeated as long as diplococci or symptoms persist; or, in the absence of such persistence, until four full doses have been given; or, in the presence of continued symptoms, until the chronic stage is established.

Too much stress cannot be laid upon the necessity of giving several repeated full doses rather than a single one, or smaller ones at all times when the injection of serum is indicated. My experience has led me to believe that this is especially important in relapses. The cases in in my series in which single doses were given in relapses did not do as well as those in which the relapses were combatted by repeated full doses.

SUMMARY OF THE METHOD OF USING ANTI-MENINGITIS SERUM.

1. Perform lumbar puncture, prepared to give the serum as soon as meningitis is suspected. If the fluid is cloudy, give the *first* full dose of serum at once, without waiting for the bacterial examination, although further doses are only to be given in case the diplococcus intracellularis is found in the cerebrospinal fluid. The serum is of no value in other forms of meningitis.

2. At every dose give as much as possible. Always withdraw as much cerebrospinal fluid as possible. Give 30 ccm. in all cases in which the amount of fluid withdrawn is 30 ccm. or less, unless a distinctly abnormal sense of resistance is encountered after as much has been injected as has been withdrawn. In all cases in which the amount of fluid withdrawn is more than 30 ccm., give as much serum as the quantity withdrawn. In very severe or fulminating cases, in which the amount withdrawn is between 30 ccm. and 45 ccm., give 45 ccm. unless abnormal resistance is encountered.

3. In very severe or fulminating cases, repeat within twenty-four hours as soon as the patient begins to get worse again, or at twelve-hour intervals.

4. In average cases, repeat daily, until four full doses have been given in all cases.

5. If diplococci persist after four full doses have been given, continue the injections until they have disappeared.

6. If subjective symptoms, any impairment of the mental condition or fever persist after diplococci have disappeared, or after four full doses have been given without progressive improvement, wait four days if the condition of the patient is stationary. At the end of four days, or at any time if the patient's condition is getting worse, repeat the treatment with four daily full doses, and continue as if this were the original attack.

7. When a relapse occurs, either by reappearance of diplococci in the cerebrospinal fluid or by a reappearance of symptoms, give four daily full doses and continue treatment as if this were the original attack.

8. Treatment along these lines should be continued until the patient is symptom-free, without diplococci in the fluid, or until the chronic stage is established.

9. In the chronic stage, watch for possible reappearance of diplococci by doing occasional lumbar punctures. If diplococci reappear, resume treatment with the serum as outlined above. In chronic cases with excessive cerebrospinal fluid under marked pressure, try daily lumbar puncture without the injection of serum.

The following charts are part of the evidence upon which the above conclusions are based:

EXPLANATION OF THE CHARTS.

Chart 1. A case illustrating the result of too small doses. It was a case of average severity in which injections were begun on the second day. As only small quantities of cerebrospinal fluid were obtained, small doses of serum were given daily for four doses. Symptoms improved but were not completely relieved, and the temperature rose. On the tenth day the patient's condition was worse, and three small doses were given, after which the condition remained stationary. On the twenty-first, twenty-second and twenty-third days, sufficient cerebrospinal fluid was obtained to permit the giving of full doses of 30 ccm. This was followed by rapid permanent relief of the symptoms and fever.

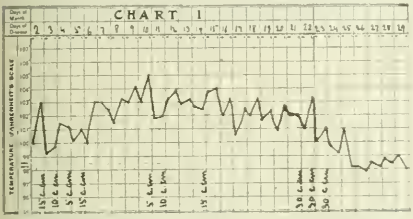


Chart 2. A case in which the serum was given in full doses of 30 ccm. It was a case of the same initial severity as that shown in Chart 1, and in both, treatment was begun early in the course of the disease. The use of successive full doses was followed by lysis and permanent relief of symptoms.

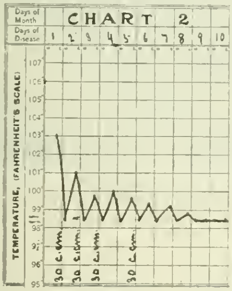


Chart 3. Illustrating improper use of the serum, both at the outset and after the case became prolonged. At the outset, on the twelfth day, one small dose was given and was followed by no effect. The injections were not repeated until the twenty-eighth day, at which time the disease was still in an active stage. Injections were then begun in full dose and were not repeated on successive days, but strung along at intervals. On the thirty-eighth, thirty-ninth and fortieth days, full doses were given with marked improvement. An additional dose was given on the forty-second day, probably because of an evening rise of temperature, after which recovery was uninterrupted. This chart shows no improvement until the serum was used in successive doses.

Chart 4. In this case the serum treatment was begun on the eleventh day, about the same stage in the disease as in the case shown in Chart 3. The case was one of greater initial severity than the other, but the injection of four full successive doses was followed by rapid improvement and recovery.

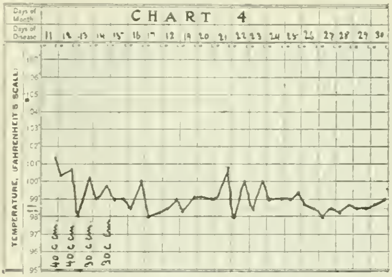
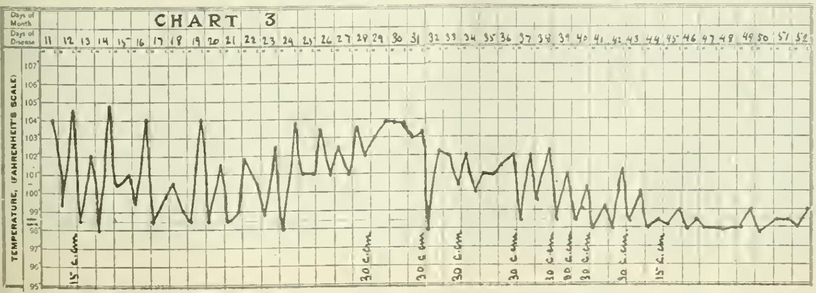


Chart 5. This case illustrates the improper management of relapses. The two first doses of the serum were followed by a marked improvement in the patient's mental condition and subjective symptoms. On the twenty-first day these symptoms became notably worse and one injection of 15 ccm. was given without effect on the symptoms. The patient's condition remained stationary until the twenty-fifth day, when one full dose was followed by a fall of temperature and rapid relief of symptoms. A relapse occurred on the twenty-ninth day, when one injection of 10 ccm. was followed by steady



though slow improvement. I believe that in this case relapses might have been prevented if the serum had been properly used.

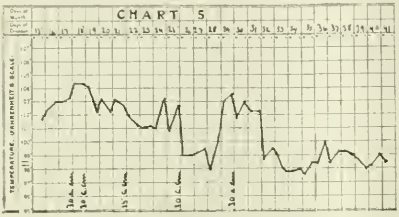
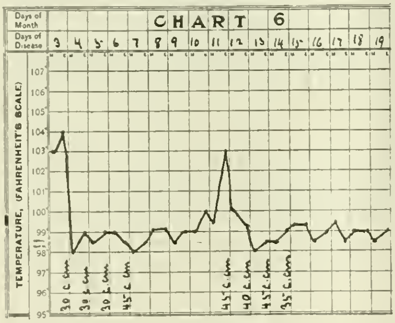


Chart 6. A case in contrast to that shown in Chart 5, showing the proper management of a relapse.



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CARCINOMA OF THE VERMIFORM APPENDIX, PROBABLY PRIMARY, IN A CHILD NINE YEARS AND ONE MONTH OF AGE.

BY HILBERT F. DAY, PH.B., M.D.,
AND
LAWRENCE J. RHEA, B.S., M.D., BOSTON,
First Assistant in Pathology, the Boston City Hospital.
(From the Pathological Laboratory of the Boston City Hospital.)

We feel that the publication of this case of carcinoma of the vermiform appendix[1] is warranted for the following reasons: It was found in an appendix removed for another cause; it occurred in a child only nine years and one month old, and carcinoma[2] of the vermiform appendix is comparatively rare.

CLINICAL REPORT. — DR. DAY.

The patient whose symptoms and lesions we are reporting was a nine-year-old school girl of Boston.

Family history. — The child's parents were both born in Ireland. They have always been well and strong. Her mother is fifty-one years old. She has been married twice. Her first marriage was at the age of fifteen and resulted in 9 normal children, 4 of whom are living and well; the others died in infancy, 2 of scarlet fever, 2 of pneumonia and 1 of bronchitis. The father of these children died of pneumonia. He had always been well and strong previously. The second marriage was twelve years ago. Our patient is the only child.

None of the patient's relatives, so far as can be ascertained, have ever had consumption, heart disease, dropsy, Bright's disease, growths or tumors of any kind. There have been no monstrosities in the family.

The mother has a small mole situated between her breasts. It is flush with the skin, and about 2 cm. in diameter.

Past history. — A normally delivered and well-nourished, breast-fed infant, born Oct. 31, 1898. Never ill until first year. She then had "typhoid pneumonia," "gastric fever," "German measles" and "bronchitis," all at the same time. Ill for about two months. Once or twice a year since she has had an attack of nausea and vomiting. Vomitus consisted of a green fluid. These attacks had apparently no relation to food eaten. They would last about one day and disappear after treatment with castor oil. Last attack about six months ago. Mother does not know whether child has lost weight, but thinks that she has not. Has always played about with other children and attended school regularly.

Present illness. — For past two months child has occasionally complained of pain located in right lower abdomen. Mother paid little attention to this. Nov. 6, 1907, our patient had a sudden sharp attack of pain located in the center of her abdomen. This pain is said to have been aggravated by pressure. Child put to bed. She did not vomit, but pain and tenderness increased in severity and finally became localized in right lower quadrant of abdomen. Sent to hospital the following day.

Physical examination. — Fairly well-developed and nourished child. Conscious and rational. Pupils equal and react to light and distance. Tongue protruded straight; has a dry, white coat. Slight enlargement of tonsils. Nothing else abnormal seen in throat. No palpable glandular enlargement. *Heart* normal in area; no murmurs heard. Action rapid and regular. *Lungs:* good resonance and respiration throughout. Knee jerks obtained. All reflexes normal. Temperature, 101.5; pulse, 128; respiration normal.

Local examination. — Patient rather anemic looking, with pinched face. Facial expression suggests peritonitis. Abdomen presents spasm of right side. Well-marked tenderness and spasm in right lower quadrant. No point tenderness; no mass felt. Palpation slightly unsatisfactory on account of its causing pain.

Nov. 7, 1907, ether and operation at parent's request. Usual asepsis. McBurney incision one and one-half inches long made over McBurney's point. Peritoneum opened; three strips of gauze used to wall off the appendicular region. The appendix, found by exploring with finger, was retrocecal and bound down by very firm adhesions. Adhesions carefully separated. The appendix, when made to present in wound, was seen to be acutely inflamed and showed a small perforation in its side from which escaped fecal material. Appendix seized with Oschner clamp. Meso-appendix separated. Meso-appendix and base of appendix tied off together by two catgut ligatures. Appendix cut off about one third of an inch from cecum and removed. Stump not inverted or cauterized. Cigarette drain carried by appendix stump toward pelvis. Wound closed about drain with interrupted catgut sutures. Interrupted silkworm gut sutures carried to skin. Fair ether recovery.

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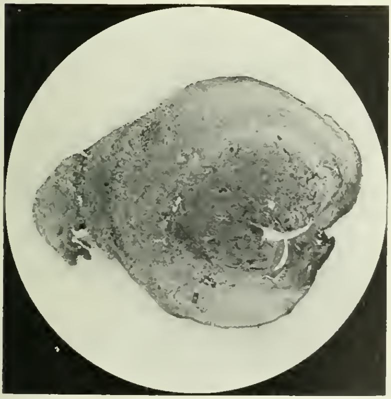
Patient made a satisfactory convalescence from her operation. Wick gradually shortened and was finally omitted Nov. 23. Patient left hospital Nov. 29 with a very small granulating wound, having gained rapidly in general condition. She appeared perfectly well.

Patient seen June 24, 1908. Since operation, seven months ago, she has been perfectly well, and has attended school regularly. The abdominal wound is

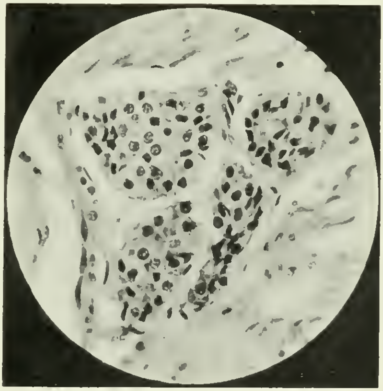
There is marked increase in connective tissue, which has completely obliterated the lumen of the appendix. This connective tissue is dense, contains few nuclei and has a poor blood supply.

Both acute and chronic inflammatory changes are present. The acute changes are most marked in areas in the peri-appendicular tissues and consist of infiltration with polynuclear leucocytes and areas of necrotic tissue. At one point both muscular coats and a small area of the underlying connective tissue is necrotic. The chronic inflammatory changes are shown by an overgrowth of connective tissue and by the presence of groups of cells of the lymphocyte

CARCINOMA OF THE APPENDIX — DAY



Cross section of the vermiform appendix showing obliteration of the lumen and irregularly distributed groups of epithelial cells.



High power showing nests of epithelial cells in submucosa.

MICROSCOPICAL FINDINGS.

The tissue was fixed in 10% formaldehyde and stained in hematoxylin and eosin.

Sections taken through the distal 5 mm. of the vermiform appendix show absence of the mucosa, remains of the two muscular coats, increase of connective tissue, cells of acute and chronic inflammatory reaction, areas of necrotic tissue and nests of epithelial cells.

The muscular coats show their normal relation in only a small portion of each section. In the remainder of the section, edema, cells of inflammatory reaction, necrotic tissue and masses of epithelial cells have distorted, separated or replaced them.

Hospital on Nov. 7, 1907, complaining of symptoms corresponding to those caused by acute appendicitis. Local peritonitis and a gangrenous perforated appendix containing a fecal concretion was found at operation. There were no grossly demonstrable abnormalities or tumors. There is no history of such in the family. The patient made a good recovery. Microscopically the appendix showed a scirrhous carcinoma, which involved its distal 8 mm. and had infiltrated the peri-appendicular tissue. There was also acute inflammation with necrosis and chronic inflammatory reaction.

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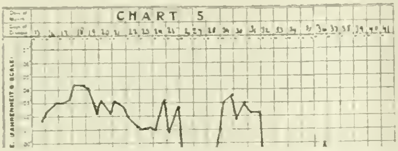

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Patient made a satisfactory convalescence from her operation. Wick gradually shortened and was finally omitted Nov. 23. Patient left hospital Nov. 29 with a very small granulating wound, having gained rapidly in general condition. She appeared perfectly well.

Patient seen June 24, 1908. Since operation, seven months ago, she has been perfectly well, and has attended school regularly. The abdominal wound is firm. It gives no impulse on coughing. There is no demonstrable tumor in the region of the vermiform appendix or elsewhere in the body. No local or general glandular enlargement.

A letter from patient, October, 1908, reports continued good health.

PATHOLOGICAL REPORT. — DR. RHEA.

B. C. H., 8-07-918. The specimen is a vermiform appendix. It measures 6 cm. in length. The proximal half has a slight spongy feel, is dark red in color and its superficial blood vessels are deeply injected. Throughout the distal half the external surface of the appendix is quite soft, less so in the region of the tip, has a greenish tint, which increases in intensity as the tip is approached, and is considerably swollen. Its external surface is covered by a friable, slightly elastic, greenish exudate. On the surface opposite the mesenteric attachment, and situated 2.5 cm. from the tip of the appendix, there is a round, dark red area 5 mm. in diameter, in the center of which is a small opening. A probe inserted into this opening passes into the lumen of the appendix.

On section the proximal half is slightly thickened and its wall contains a small amount of thin, blood-stained fluid (congestion and edema). The lumen in this region is patent, is somewhat dilated and contains a thick, blood-stained fluid and one firm, fecal concretion 3 mm. in diameter. The mucous membrane is intact except the extreme proximal portion (lacerated at operation). The distal half of the vermiform appendix shows, on section, the various stages of necrosis following acute inflammatory reaction. This is most marked immediately surrounding the perforation described above. The lumen, which is patent to within about 8 mm. of the tip, is considerably dilated and contains a thick, blood-stained fluid. Beyond this point the lumen is occluded by dark red, rather soft, edematous tissue. The mucous membrane is absent throughout the distal half.

ANATOMICAL DIAGNOSES.

Acute gangrenous appendicitis with perforation.

Fecal concretion.

MICROSCOPICAL FINDINGS.

The tissue was fixed in 10% formaldehyde and stained in hematoxylin and eosin.

Sections taken through the distal 5 mm. of the vermiform appendix show absence of the mucosa, remains of the two muscular coats, increase of connective tissue, cells of acute and chronic inflammatory reaction, areas of necrotic tissue and nests of epithelial cells.

The muscular coats show their normal relation in only a small portion of each section. In the remainder of the section, edema, cells of inflammatory reaction, necrotic tissue and masses of epithelial cells have distorted, separated or replaced them.

There is marked increase in connective tissue, which has completely obliterated the lumen of the appendix. This connective tissue is dense, contains few nuclei and has a poor blood supply.

Both acute and chronic inflammatory changes are present. The acute changes are most marked in areas in the peri-appendicular tissues and consist of infiltration with polynuclear leucocytes and areas of necrotic tissue. At one point both muscular coats and a small area of the underlying connective tissue is necrotic. The chronic inflammatory changes are shown by an overgrowth of connective tissue and by the presence of groups of cells of the lymphocyte series. These cells are scattered throughout the tissue and occur either in groups of varying size or are irregularly distributed.

In addition to these evidences of acute and chronic inflammation the distal 5 mm. of the vermiform appendix show also irregularly distributed masses of epithelial cells. They are most numerous within the dense connective tissue, which has replaced the lumen of the appendix, and they have also invaded the muscular coats. At one point nests of epithelial cells have extended even to the peri-appendicular tissue.

The groups of epithelial cells contain from a few to many cells. They show a distinct alveolar arrangement and occur as irregular to circular masses or as narrow rows of cells situated between bands of connective tissue.

A good many of the epithelial cells show degeneration. The number of cells thus affected vary from a few, confined to a single nest of cells, to areas where several separate nests are involved. When only a portion of one nest of cells is affected, it is generally those about the periphery. The degenerated cells show various changes from swelling and vacuolation to the formation of a granular, more or less confluent, hyaline-like mass.

The individual epithelial cells in the alveoli are of moderate size, generally spheroidal or polyhedral in shape, and their outlines are only fairly distinct. Their cytoplasm stains poorly and contains numerous fine granules. Their nuclei generally stain rather deeply. An occasional nucleus contains a nucleolus. No mitotic figures are seen.

The epithelial cells are occasionally arranged about a distinct lumen. These epithelial cells are somewhat taller than those seen elsewhere. They stain rather poorly, their cytoplasm is granular, their nuclei stain deeply and are generally situated near the center of the cells.

MICROSCOPICAL DIAGNOSES.

Acute gangrenous appendicitis.

Scirrhous carcinoma of the vermiform appendix.

SUMMARY AND CONCLUSIONS.

A child nine years and one month old entered the Second Surgical Service of the Boston City Hospital on Nov. 7, 1907, complaining of symptoms corresponding to those caused by acute appendicitis. Local peritonitis and a gangrenous perforated appendix containing a fecal concretion was found at operation. There were no grossly demonstrable abnormalities or tumors. There is no history of such in the family. The patient made a good recovery. Microscopically the appendix showed a scirrhous carcinoma, which involved its distal 8 mm. and had infiltrated the peri-appendicular tissue. There was also acute inflammation with necrosis and chronic inflammatory reaction.

The tumor is unquestionably a scirrhous carcinoma. It is probably primary in the vermiform appendix. The reason for such an assumption is based upon the following:

1. This tumor belongs to the slow growing type, which is most often found in the vermiform appendices of comparatively young persons, and has in several cases been proved to be primary there.
2. Clinically there is no evidence of carcinoma elsewhere in the body.
3. Primary carcinoma is more common than metastatic carcinoma of the appendix.
4. Seven months after the operation there is no evidence of recurrence or of a tumor elsewhere in the body.

ELECTRO-THERAPEUTICS IN THE TREATMENT OF TUBERCULOSIS.*

BY J. FRANK WALLIS, M.D., NORRISTOWN, PENN.,

Consulting Dermatologist to the State Hospital for the Insane, Norristown; Consulting Dermatologist to the Southern Dispensary; Radiotherapeutist and Consulting Dermatologist to the Kensington Hospital for the Treatment of Tuberculosis, Philadelphia.

In the treatment of consumption those agents should be selected which will restore the nutritive function of the body, including digestion, absorption, secretion, excretion, respiration and circulation. Remedies that react upon these subsidiary processes are of the greatest value in treating the disease. Electro-therapeutics plays an important rôle in stimulating to activity the disordered physiological conditions accompanying tuberculosis. It is my purpose in this lecture to treat only upon those forms of electrical energy that are of therapeutic value in this disease.

Electricity has been known since the time of Thales, 600 B. C. The Greeks knew that amber excited by friction possessed power of attracting lighter objects; they called this fossil resin, "electron." Dr. Gilbert called this principle, "electric," giving us our word "electricity." The most important discovery is credited to Volta, in 1800, when he produced his battery composed of glass in which were immersed the dissimilar metals, zinc and copper, the former the negative, and the latter the positive, pole. This form of electricity is known as the galvanic current, named after the philosopher and anatomist, Galvani. The two poles of the battery have distinct differences physically and therapeutically; therefore the choice of the pole is of the utmost importance. The positive pole will check hemorrhage, and the negative accelerates it. The positive has an affinity for acid and the negative for alkalies. Pain is relieved by the positive and increased by the negative pole. The positive pole constricts the blood vessels, the negative dilates them. Pus, being alkaline, can be withdrawn from an abscess by placing the negative electrode over the abscess and the positive applied at some distant part.

"Cataphoresis," "Electric Endosmose" and "Voltaic Narcotism" are some of the titles applied to the chemic property of the galvanic current. The first attempt to introduce medicines into the system by this method was made by Fabé-Palaprat, who in 1863 applied a compress of iodine on the left arm connected with the negative pole of the battery, and on the right arm was a compress saturated with a solution of starch water. He succeeded in producing an iodine reaction on the starch compress. Dr. Klenke and Dr. Hassenstein, in 1847, introduced iodide of potassium and mercury by this process. Dr. Richardson, in 1895, succeeded with aconite and chloroform, producing anesthesia. De Renzi has successfully treated tuberculosis by applying a 10% solution of bicarbonate soda on a positive electrode of zinc and a 5% solution of potassium tartrate on the negative pole. Tuberculous sinuses have been cured by introducing a copper electrode connected to the negative pole; the electrolytic action of the current dissolves the copper and drives it into the tissues.

Static electricity is a frictional current generated from a static machine by a number of stationary and revolving plates. This form of current has no special value in tuberculosis except in stimulating respiration and aiding metabolism. When the current from a static machine is passed through condensers or Leyden jar, an oscillating current having a very rapid rate of interruptions, with very high electro-motive force, is produced. This is known as the high-frequency current and it has proved of considerable value in treating tuberculosis. By studying the physiological action of the high-frequency current, we can at once appreciate its therapeutic value; there is increased arterial tension through the medium of the vasomotor nerves and nerve centers. The elimination of excrement is greatly increased, excess of urates and uric acid are reduced to normal, the amount of urea thrown off is from 11 to 40 gm., the elimination of carbonic acid is doubled. The urine is increased, there is marked increased oxygenation of the blood and decided increase in the nutrition of the body. Caffarena claims a decided increase in the gastric and intestinal peristalsis in case of atony. The sedative action on the nerves relieves neuralgia. The high-frequency current has proved to have decided bactericidal properties. D'Arsonval, in his investigation on guinea pigs, demonstrated a retarding influence on the growth of bacillus tuberculosis. "Grumbaum found that toxoids are capable of producing immunity and that the modification brought about by this current is one from toxin to toxoid. That the virulence of the toxins is attenuated is stated also by Reviere; repeated applications decrease the reproductive power of the bacilli." (Allen.) Dr. Chisholm Williams has given the results in 43 cases of tuberculous patients. Thirty-two cases had so much improved that none had required treatment for thirteen months, and of the 43 cases, 3 died. He considers the guidance of the treatment is the temperature. His principal method of treatment was auto-condensation. X-ray has been tried and was hoped at one time to be valuable in the treatment of tuberculosis, but the most favorable reports have only shown certain relief of the symptom, but never arrested the disease. The greatest value of the Röntgen ray has been utilized in radiography and is of the utmost importance in diagnosis. Phototherapy is that branch of electro-therapeutics which treats of the therapeutic action of light excluding the rays of Röntgen. That the animal and the vegetable kingdom owed their existence to the light of the sun was known to the ancient Greeks and Romans. Although they did not understand the chemical nature of these rays, and their relation to physiology, they had then, as we have now, ample proof that life was dependent upon light. The writings of Cicero and Pliny speak of exposing the naked body to the action of the sun as a factor in maintaining and restoring health. We also read of sun seats and sunning places on the roofs and gardens. A solarium was essential to every patrician of Rome. The untutored savages were not ignorant of the power of the sun's rays. For centuries we have been attributing the benefit obtained from our recreation in the open air—our vacation to the mountain and seaside — as a result of inhaling pure air or ozone, not considering the fact that the atmosphere owes its purity to the sun, as we do our health and vigor to the physiological action of light. We are indebted to Professor Finsen, of Denmark, for his practicable application of the sun's rays and artificial light in the treatment of disease. He proved that the sun burn was not produced by the heat of the sun, but by the actinic rays; that all of the rays of light had certain therapeutic properties, but the most valuable were the ultra-violet or chemical rays. The red rays he undoubtedly proved of great aid in the treatment of smallpox. The sun bath, as advised by Finsen, consists in a promenade naked in a sunlit yard, the patient exposing his body to the chemical rays, and to avoid the thermal effect the ground was sprinkled with water. For a tonic effect a short exposure was required; to react upon elimination a prolonged exposure was necessary, not interfering with the thermal energy; and for nutritive effect a greater time was required, with shower baths to minimize the temperature. This form of treatment combines the results of the action of light and air. These sunbaths are of decided physiological action, improving nutrition, stimulating the heart and respiration, thereby aiding assimilation and elimination.

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* Read before the Training School for Nurses of the Henry Phipps Institute for the Study, Treatment and Prevention of Tuberculosis, May 23, 1908.

Kellogg finds an increased production of carbonic acid indicative of an increased consumption of hydrocarbon and carbohydrates. The prolonged effect of the light upon the circulation of the skin depletes the congested abdominal organs, at the same time stimulating the oxygen-storing capacity of the red corpuscle. In a short exposure the whole blood stream will become completely oxygenated. This is possible if only a portion of the body is exposed to the light. According to Kellogg, the collateral relation of the circulation of the lungs and pleura to the skin covering the chest, arm and back are associated through the internal, intercostals, subclavian, bronchial, nutrient, and the internal iliac arteries. From this intimate relation between the skin, the lungs and pleura we can readily appreciate the therapeutic value of the application of light to the chest in tuberculosis. This form of treatment is of equal importance in treating tuberculosis of the throat, glands and joints. Willard, in his article in the *Journal of the American Medical Association*, July 18, 1903, speaking of sunshine in the treatment of tuberculosis, says: "In my own hospital wards I have always considered the sun porch the most important of all the means of cure." "Every tuberculosis joint confined to bed, either with horizontal extension or with fixation or traction of joint, spends the entire day at all seasons lying directly in the sunshine, his eyes and head being protected by a green shade attached to the head of the bed. The effect on health, appetite and cell resistance is simply marvelous." McKenzie and Galloway speak very highly of this form of treatment. The chemical action of light not only aids in the arrest of the disease by the increased hemoglobin-carrying power of the red corpuscles, the destruction of pus, the suspension of the growth of the bacilli, the elimination of toxins, and its stimulating action on all the nutritive functions, but has a decided physical influence upon the ingestion of foods and the internal administration of drugs. Busck, in studying the action of quinine in the treatment of malaria, concludes that it is not the toxic effect on the malarial plasmodium alone, but the fluorescent property of quinine preparations; and in accordance with his deduction he advises sun or electric-light baths to be given while administering the drugs. The fluorescent property of quinine in dilute solution is evident when exposed to sunlight or light of the arc lamp. Believing that this property of the alkaloid would be of advantage in the treatment of tuberculosis, I have made it a rule to administer quinine to all my patients before exposure to action of the light, and from the rapid improvement in my patients I consider it of great value in treating the disease. Dr. Mount Bleyer has studied the physiological influence of the sun and the arc rays upon the tuberculous patient. After the administration of the iron preparations he found the iron salts were taken up more rapidly, and more beneficial results followed. The light from the electric arc lamp and the sun have similar qualities; they both possess the same luminous and chemical rays, but the electric light has the advantage of being alway available and more constant in its radiations; also the ultra-violet frequencies which have the greatest therapeutic value are brought to focus near the source of illumination. These, coming from the sun, are largely absorbed by the atmosphere in their passage from the sun to the earth. Freudenthal, in his experience in treating tuberculosis of the lungs, claims the light of the arc lamp of great value in improving nutrition, aiding in the elimination of exudate, increasing metabolism, relieving pain and greatly facilitating expectoration. He has treated with success tuberculosis of the larynx, relieving some of the annoying symptoms in a very short time

Margaret Cleaves reports a chronic tuberculous ulcer of the larynx being healed in two weeks after having only five exposures to the electric arc. The arc lamp, though rich in actinic rays, has not the penetrating power of the incandescent lamp, but the depth of absorption is largely aided by the other colors of the spectrum. Although the incandescent light loses much of the ultraviolet or chemical rays by the absorbing power of the bulb, yet its penetrating power is greater. In my experience I find them of equal value in treating tuberculosis. My incandescent lamp is of 500 candle-power; lamps under 100 candle-power I find of little value. In reviewing the methods of treatment of tuberculosis by advocates of electro-therapeutics, I find every physician has a favorite method in treating the disease. Some prefer one form of energy while others adopt a combination of forms. My usual method is: Administer the electric light for fifteen to thirty minutes, — the time of exposure varies according to the action of the light upon the temperature and pulse of the patient. This is followed by five to ten minutes' application of the high-frequency current. The patient reclines upon an auto-condensation couch, while the chest is massaged with a surface vacuum tube. This method of applying the current has the advantage of an electric current of high voltage with a perceptible amount of vibration, the tube becomes illuminated with beautiful violet radiations and during the applications ozone is generated and absorbed by the tissues. Dr. Stern, of Indianapolis, has proved the absorption of ozone by this method, having found its presence in the body by chemical reaction. Before concluding this lecture I will review the most important forms of medical electricity previously mentioned in the treatment of tuberculosis.

In studying the physiological and therapeutic action of these methods, we find that they all possess properties in common; they all stimulate the nutritive functions, but the chemical action of the rays of the sun or the light of the high-power electric lamp and the high-frequency current alone stimulate all these functions, including digestion, absorption, secretion, excretion, respiration and circulation of the blood. We also learn that pathological processes are arrested, pain is relieved, expectoration is facilitated, bacteria are destroyed, toxins are eliminated; the absorption of oxygen, the elimination of carbonic acid, sleep and rest produced; appetite increased and nervous symptoms so distressing to the patient greatly benefited. We are taught that the arrest and cure of this dreaded disease can be accomplished by those factors that aid in the production of immunity against the tubercle bacillus and its toxins and that this depends upon cell nutrition. Therefore, what better remedy have we to accomplish this phenomenon than the action of light and electricity? It is not a panacea for this disease, nor can health be restored without nutritous diet, moderate amount of exercise, proper rest and living in the open air. Nor can all those patients recover who are in the advanced stages of consumption. Nevertheless, I have seen great improvement in seemingly hopeless cases; if their life cannot be saved, it can be prolonged, their comfort can be assured and their end made less distressing. It may seem from a careful digest of this lecture that my claims for this mode of treatment are somewhat extravagant, yet my experience has been corroborated by such conservative authorities as D'Arsonval, Oudin, Piffard, Chisholm Williams, Kellogg, Freudenthal, Finsen, Margaret Cleaves, Loeb and others. I regret the time is too short to describe in detail the manner of administering these forms of treatment.

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ON CERTAIN EVIL TENDENCIES IN MEDICINE AND SURGERY.

BY MAURICE H. RICHARDSON, M.D.,
Moseley Professor of Surgery, Harvard University.

(Continued from No. 22, p. 716.)

It would seem from these two cases that, in the event of a mistaken clinical diagnosis, there may be also a mistaken operative diagnosis and that the patient may be subjected to an unnecessary and fatal operation, even when the greatest care has been taken, both before and during operation, to determine the exact lesion.

The knowledge of having taken great care in the diagnosis before operation cannot but lessen the responsibilities of such unfortunate occurrences, for it is easy to imagine the effect upon the man of conscience of a fatal and useless operation.

Another experience, a very recent one, illustrates my views upon this subject. A man who had not yet reached the cancer age had been on several occasions in the hands of a very conservative physician, a man of international reputation. The symptoms were those of pyloric stenosis of mild degree, caused by a gastric ulcer. After two or three years the patient, who was comparatively comfortable under medical treatment, but never well, was sent into the surgical wards of the Massachusetts General Hospital for mechanical relief. I observed the patient a week and finally consented to explore on the ground of the failure of cure after prolonged palliation. I found a moderately dilated and thickened stomach, with a distinct tumor of the pylorus. The pylorus was deeply placed and could not be brought up into view, but it was easily felt. I was of the opinion that this tumor was an old gastric or duodenal ulcer, but I was not able to demonstrate it beyond a doubt. A mechanical obstruction existed, for which I made a posterior gastro-enterostomy. With my fingers in the stomach, I could feel no evidence of cancer.

The importance of an accurate history for aid in diagnosis at exploration was for the first time in my experience emphasized in this case. It never had occurred to me that sometime I might, at the very operating-table, have to rely upon the history to decide between methods of operating, when the lesion was in full view and in my very fingers, as in this case. And yet I recall the case of Lieut. M. (O. R., vol. 24, page 48) who was, years ago, referred to me by Dr. Fitz, and upon whom I operated for pyloric adhesions. I felt something in the pylorus which seemed to me wrong, a thickening, though not strictly a tumor. I left, with reluctance, the pylorus untouched; but, as events proved, wisely, for the patient made a splendid recovery and remains well.

Another condition in which one may feel doubt, and call upon the history, is when he palpates the pancreas in explorations for painless jaundice, as he is very unwilling to cut into the pancreas for purposes of diagnosis.

Recently I examined a pancreas at an autopsy upon a patient with prolonged jaundice, who, in the service of a colleague, had been treated by cholecystostomy. There was great difference of opinion as to the effect of the pancreatic head in causing the fatal result, which followed some weeks after the operation. I was sure of a neoplasm in the head of the pancreas and accounted for the symptoms in that way. Dr. Wright immediately demonstrated the pancreas to be normal. I have thought that in my cases of chronic pancreatitis the jaundice may have been due to the thickening which I detected in the head of the pancreas. And yet there is no way of telling, in my own cases at least, just what was the cause of the symptoms, for all the patients have recovered after temporary drainage of the biliary passages through the gall bladder. In some of the patients the symptoms were severe and prolonged. There was, in all, abundant time for a careful and studious diagnosis, and the exploratory operation rested upon grounds which to me seemed adequate. The operative diagnosis rested really upon the fact of recovery and was in no instance surely demonstrated. In one case the suspected pancreatic cancer was proved by autopsy. Prolonged and painless jaundice, in a man of fifty-seven, had excited the fear of pancreatic cancer, but experience in milder cases justified a hope of chronic pancreatitis. Exploration revealed a hard nodule in the pancreas which the *tactus eruditus* called cancer. Cholecystostomy and drainage was followed in three or four days by a fatal spontaneous hemorrhage from a vessel of the lesser curvature of the stomach. Autopsy showed a nodule of cancer in and surrounding the common duct.

In this awful occurrence were the surgeon not proved by autopsy absolutely correct in every particular, he might, especially if he were a younger man, have suffered an irreparable blow to his professional reputation.

No experience in my life ever showed more plainly the importance of accurately recognizing upon the living subject anatomical conditions. Upon the accuracy of the eye and finger, or of the finger alone, depends a patient's life and perhaps a surgeon's reputation. And how much attention do we give the subject, except in the operating-room, where the surgeon alone, with possibly his assistants, has the advantage of educating the touch?

Every autopsy should be made use of for teaching young men the touch of normal as well as abnormal anatomy. A single tumor of the pylorus could be used for the education of a whole medical school in the "feel" of pyloric growths.

There is much in modern science to aid in diagnosis, but there is one essential thing which will always be first and most indispensable to the practitioner of our art, whether of medicine or of surgery, and that is the finger tips.

I believe that the tendency to-day, a good one, is back to the old-fashioned methods of diagnosis: the history, the touch, the tongue, the pulse, the indescribable picture of the patient as a whole, upon which many an experienced practitioner bases his at times wonderful intuitive deductions. Not that all modern aids should not be studied and applied; but, in the glamour of a new method tried ten thousand times, let not methods proved in millions be neglected.

The accuracy of a non-operative diagnosis should always be severely questioned when the alternative diagnosis, or a strong possibility of that diagnosis, means abandonment of the patient to death and despair; that is to say, a diagnosis of little cause for operation must be carefully questioned when the other possibilities offer great cause for operation. The accuracy of the diagnosis of benign mammary tumors must be severely arraigned because the alternative diagnosis is malignant mammary tumor. The diagnosis of acute indigestion must be rigidly inquired into when the possibilities include acute appendicitis, perforated gastric ulcer or gallstones. In a word, the tendency of the times must be toward refinements in diagnosis, with strong emphasis upon the possibilities of overlooking lethal conditions in making the diagnosis of trivial complaints.

This practical necessity of doubting a favorable opinion until that opinion is so intrenched as to make it impregnable is illustrated almost daily by my present work. Admitting as I do the fallibility of human effort, I admit, of course, the fallibility of all observations and deductions in the science of medicine and surgery. And in emphasizing the possibility of error in a diagnosis which contra-indicates surgery, the strongest argument in favor of operative diagnosis is emphasized; in doubting the truth of a diagnosis which imposes a useless or perhaps worse than useless operation, the strongest argument in favor of the bedside diagnosis is emphasized. Nevertheless, the tendency, not to say the hurried resort, to the operative rather than the bedside diagnosis is an evil tendency. It is evil, however, chiefly in that it discourages careful study and ignores the possibilities of a diagnosis so accurate as to be practically incontrovertible. It hampers efforts at diagnosis which would do away with many of the tragedies of modern surgery, even in the hands of the experienced. I say, in the hands of the experienced, because the evil tendencies of which I speak are largely in the practice of the inexperienced. But if they are largely in the hands of the beginner in surgery, is it not because of the teachings of the experienced? Such is, indeed, the fact. There is a school, so to speak, of exploratory operators and to this guild flock many to whom the operative methods strongly appeal.

I trust that I shall not be misunderstood in saying again that there are many arguments in favor of the operative diagnosis, and that, with intelligent discrimination based upon adequate study in the selection of suitable cases, I am fully in accord with these men. But I do mean to oppose as vigorously as I can the exploratory operation when it is undertaken, we will say, for abdominal growths secondary to demonstrated cancer of the breast, sarcoma of the testicle, melanotic sarcoma of the toe; or when a tumor of the stomach causing no stenosis of the pylorus or other mechanical interference is explored after a suspicious mass has been found in the left subclavian triangle; or when operation is undertaken for abdominal tumors with ascites in connection with a remote malignant focus; or when it is undertaken for tumors of such situation and extent that were the diagnosis absolutely favorable, no radical operation would be possible. And, finally, I agree to the operation for diagnosis when every method for accuracy has been exhausted and there yet remains, in the apparently hopeless case, a reasonable chance of error. For example, I would explore the abdomen when symptoms persist after reasonable medical treatment, provided those symptoms are in themselves disabling or significant of serious pathological lesions. In a word, to repeat, I would have the exploratory operation the court of last resort rather than that of first, the court of final appeal, after a prompt and faithful trial of a case in which there may be error of grave and far-reaching effect.

This subject is to me a very practical one, for I am daily brought face to face with problems that emphasize its importance.

Let me take a few recent experiences in the breast tumors of a week, now vividly before me.

The first patient was a woman of fifty who for some months had known of a slight dimpling of the left breast. A glance showed that, on the overwhelming chances, the dimpling was caused by cancer. The conditions admitted of no doubt, but nevertheless the usual painstaking study was given the patient, lasting about a week, for she was strongly opposed to operation, and a week more or less was of no importance as to prognosis. Under the dimple was a nodule of scirrhous cancer no larger than a good-sized pea.

The second patient, a woman of fifty-five, presented a persistent discharge from the left nipple. The diagnosis, after days of study, was benign disease, a galactocele; but there was enough of doubt and danger to make certainty indispensable. No tumor could be felt and yet Dr. Whitney reported, "Fibro-cysto-adenoma with commencing cancer."

In the third case the tumor suggested strongly a chronic mastitis. Enlarged glands in the axilla, and the possible tragedy of overlooking malignancy, led to a radical operation. The tumor was circumscribed and black, an extraordinary specimen, suggesting a melanotic sarcoma and as malignant in gross appearances as can be imagined. Dr. Whitney's report was "medullary cancer." The pigmentation was owing to hemorrhages scattered throughout the tumor.

The fourth case (vol. lxxii, p. 31) showed only a dimple in the skin, in the upper margin of the left breast. The microscopic report was "scirrhous cancer."

In these four operations the question of extirpation was based entirely upon the bedside diagnosis. In every case malignancy was demonstrated and operation shown to be indispensable. In no instance was there unnecessary loss of time; nor in any was there undue haste.

In cases like these it is impossible to exclude malignancy, and reliance upon a diagnosis of benignancy is one of the gravest of the evil tendencies in the physician and the general practitioner. The surgeon, too, is not without his occasional too sanguine prognosis and finds to his regret only too often that he has overlooked cancer, as I myself have. This tendency I see illustrated every day. It is an evil one, not only because the non-expert in breast diseases relies upon the accuracy of his own diagnosis, but because the patient, relying upon inadequate experience, drifts into a state of hopeless inoperability.

A still more dangerous tendency is that which leans upon non-operative treatment of operable tumors. I have seen more real evil, because inexcusable, by reason of favorable operative prognosis from the medical treatment of cancer and sarcoma correctly diagnosticated. In cancer I have had a large experience with the x-ray, Coley's toxins, trypsin and amylopsin and, excepting the x-ray in superficial epitheliomata, I have seen absolutely no good results. On the contrary, I have seen hundreds of tumors that were favorable for operative cure become inoperable and hopeless. In sarcomata I am a witness to the occasional wonderful efficacy of Coley's method.

Trypsin and amylopsin are not worth trying except for suggestion and the hope they may stimulate.

But in connection with external and palpable tumors the tendency toward operative diagnosis, in the hands of the experienced surgeon, is not an evil. It is rather to be encouraged, for the surgeon is confronted daily by cases of external and easily diagnosticated tumors which to his experienced eye and touch are as plainly malignant as the microscopic section under the eye of the pathologist — indeed, in my opinion, even more so.

What the surgeon sees also, and here is another evil tendency on the part of the occasional operator, is the sacrifice of an organ like the breast in which the diagnosis of benignancy is so plain that he himself would not think of subjecting a wife or daughter or friend to so mutilating an operation.

I had intended to illustrate this statement, which on reflection is perhaps too sweeping, by the case of Mrs. B. (vol. xlix, p. 19) from whose breast in 1904 I removed a cyst. In 1905, while I was in Europe, another tumor appeared in the same breast and immediate operation was advised by my assistant. The report in this case was a simple cyst. The patient preferred to wait until my return. Looking up the history and finding that the original tumor had nothing either of malignancy or of suspicion of malignancy, I advised no operation. The patient was in the splendid health of youth and the breast was not lightly to be sacrificed or scarred. In view of the known pathology, I delayed. The tumor disappeared in a short time, and then refilled. Nothing has been done to this day.

Nevertheless, I make such postponements not without misgivings, for I cannot but recall the case of Miss H. upon whom I operated in 1902 for chronic mastitis; the recurrence in 1907 I supposed to be the same and postponed operation for a year on that diagnosis. I found cancer and removed it in 1908.

I recall also the case of Mrs. L., from whom I removed a benign tumor of the left breast; some years later I found cancer in the same breast and performed a radical operation; death resulted from spinal metastasis.

A few such errors of prognosis, caused by failure to find, either at the bedside or in the laboratory, a cancer-focus buried in a benign growth, cannot but increase the doubt and apprehension which every surgeon must feel in his diagnosis of tumors. Moreover, it cannot but incline him toward radicalism in treatment.

But it is certainly an evil to save breasts when there is doubt in the minds of those who are most familiar with mammary growths. Indeed, the rule, *Ubi tumor, ibi excisio,* applies with the greatest force to the treatment of breast tumors.

When we come to the consideration of abdominal tumors, we approach a much more difficult subject. At first thought it would be hard to say which tendency is the more evil, that of regarding all as non-operative and medical, or that of regarding all as operative and non-medical.

There is no doubt whatever, I think, that the great majority of abdominal tumors would be better treated if all were explored than they would if all were treated palliatively.

The evil of the modern tendency is to assume that all tumors are of necessity impossible of accurate diagnosis and especially of accurate prognosis. The good tendency should be to select, by study and care, the tumors, few, perhaps, in which operation is effectively contraindicated.

The evil tendency toward the assumption that accurate diagnosis is impossible in all abdominal tumors is so frequently illustrated that it is hard to select the best illustrative cases from so large a number.

A patient of middle age came to me after an exploratory operation in which hopelessness had apparently been proved in a large, solid abdominal tumor. I took one or two months to consider the case and finally consented to operate. The diagnosis lay between the various forms of benign abdominal tumor which may be found in the upper abdomen. In this case the abdomen had been explored by a surgeon who was also a general practitioner in a small city, a good observer and a moderately experienced man. In spite of the apparently proved inoperability in this case, prolonged observation led to an accurate diagnosis of benignancy and to a hopeful prognosis of operability.

The case was, as I say, studied by myself for some months and by the Massachusetts General Hospital Staff for a week. The tumor filled the upper abdomen, was slow of growth and did not interfere seriously with health, but did interfere much with comfort (O. R., vol. lxix, p. 143). The opinions differed between a pancreatic cyst or some form of pancreatic neoplasm and a retroperitoneal lipoma. Professor Schlesinger, a guest of Dr. Fitz's, made the latter diagnosis, which proved correct. Upon the main tumor was another, evidently the displaced spleen. The tumor, weighing forty pounds, was removed with perfect success from the lesser omental cavity through the space between the stomach and the transverse colon.

This case illustrates the brilliancy of intelligent deduction based upon large experience and should be a convincing example of the wisdom of careful study. Such cases should encourage rather than discourage resort to surgery in doubtful cases, because, after such painstaking observations on the part of so many observers, operative intervention is demanded rather than justified; its performance is insisted upon rather than permitted; its failure is a brave fight in a good cause rather than the inexcusable disaster of a bad one; and, finally, the success in such a case is the highest possible reward to the enthusiastic worker in an ill-paid profession.

On the other hand, take the hasty operation upon a supposed uterine fibroid which proves to be an unsuspected cancer of the ovary with hopeless infiltrations in the pelvis. The patient in very good health is subjected to an operation in which the surgeon, once having begun his extirpation, is unable to withdraw until it is completed. The procedure is one of the greatest difficulty and danger and when completed leaves the patient no better than before, the size of the tumor being insufficient to cause symptoms. She loses, should she die, two or three years of tolerable existence.

Indiscriminate operating upon hopeless cases injures the art of surgery and hurts the reputation of the physician as well as that of the surgeon. In the last case mentioned the art of surgery is injured to a certain extent by the rapid and sure recurrence of the disease should recovery from operation take place; it is injured still more seriously if death follows as the direct result of the operation.

In such a case some one is usually blamed. Now where does the responsibility, speaking wide absolutely frankness, lie? Does it lie with the physician who came late into the case and sent immediately for the surgeon? This physician recognized the need for exploration and the surgeon confirmed that need, operated, and found cancer. The prognosis was wrong, for a hopeless prognosis forbids operation. The operation was based upon the possibility of error in the opinion that the tumor was hopeless. The physician and surgeon did their best in this case; and, as the patient was unharmed, they were not blamed. How about the physician who, for six or eight years, had insisted upon the diagnosis of uterine fibroid? His was the responsibility of delay, and as the patient relied upon his diagnosis, a solid ovarian tumor, which might have been successfully removed in the beginning, in the end became hopeless. Delay in consulting experts in abdominal tumors is a very serious and evil tendency.

This case illustrates both sides of the argument: it illustrates the evil tendency in doubtful cases to rely upon a diagnosis the error of which means death; it illustrates also the evil tendency to explore the abdomen in cases hopelessly inoperable.

In common with most physicians and surgeons, I am frequently distressed by doubts as to the best course to pursue in the borderline cases, when it is hard to decide whether a case is medical or surgical, operable or inoperable. At one time the tendency to depend upon non-operative and palliative methods seems evil, cowardly and faint-hearted in the presence of an aggressive foe; at another time the resort to surgery under conditions of practical hopelessness, in spite of its being a desperate and courageous fight, seems inexcusably evil.

The subject may be regarded as a borderline question, a question in the borderland of medicine and surgery. It includes the treatment of such diseases as cancer of the tongue and esophagus; of the stomach and intestines; of the bladder and rectum; of the uterus, ovaries and kidneys. Under it may be discussed the operative and non-operative treatment of such diseases as myelogenous leukemia, hepatic cirrhosis and chronic nephritis.

Most of these and similar lesions are cases in point, because the surgeon, as well as the physician, knows the absolute hopelessness, the abandonment to grief and despair, which their non-mechanical treatment means. Of the cases recently under my observation, the ones which have given me the most anxiety and chagrin are chiefly those of malignant disease on the borderline of the inoperable. One patient had cancer of the bladder (vol. lxiv, p. 189), the left half of the base, involving the prostate and infiltrating the perivesical tissues. The diagnosis was made after prolonged study followed by an examination under full anesthesia and after the demonstration of cancer by the microscope and suprapubic cystotomy. In my opinion the disease was inoperable. The patient, a very important man in the community, was condemned by this decision to the slow and painful death which this disease necessarily causes. At a consultation between eminent New York specialists and ourselves, the first question asked was why extirpation of this tumor had not been attempted, a question which we had considered from the beginning. The answer was that the suprapubic exploration, with combined rectal and intracystic palpation, showed the hopelessness of this formidable procedure. Furthermore extirpation of the bladder for cancer, even under the most favorable circumstances, presents but a gloomy outlook. Under conditions of discouragement, the operation is the substitute of the greater for the lesser evil, of the fire for the frying-pan.

That such a question should be asked, however, leads one to reflect seriously upon the possibility of an omission of duty.

(To be continued.)

BURSITIS SUBACROMIALIS, OR PERI-ARTHRITIS OF THE SHOULDER-JOINT. (SUBDELTOID BURSITIS.)

BY ERNEST AMORY CODMAN, M.D., BOSTON.

(Concluded from No. 22, p. 726.)

ILLUSTRATIVE CASES OF TYPE III IN WHICH AN EXPLORATORY OPERATION WAS DONE.

Case XXI. *Adherent case in hysterical Jewess. This case might be classified also as a case of Type I, as it was an acute exacerbation of chronic symptons. The limitations were characteristic of Type II or a very acute Type I.*

Duration. — Chronic symptoms several years, acute symptoms a few days.

Treatment. — Incision into bursa and fixation in abduction.

Result. — Paresis (hysterical?) of flexors of forearm. Recovery of shoulder within three months, but contracture of little finger persisted one year later.

Mrs. J. K. Age forty-four. Massachusetts General Hospital, Oct. 24, 1905.

Patient is an extremely neurasthenic Jewess, who has previously attended the Out-Patient Department for gastroptosis. She has had some pain in the shoulder for several years, but a few days ago without trauma it became much worse and the shoulder became tender and swollen.

Examination showed the characteristic symptoms of Type II, except that there was an indefinite swelling of the region of the bursa and more than usual tenderness. The patient was apprehensive and absolutely without courage and from the first to last gave me as little aid as she possibly could.

Operation Oct. 26. Ether. The bursa was opened by an anterior incision. It contained an excess of straw-colored fluid and fibrin. The walls of the bursa were as thick as blotting paper and of a pinkish-yellow color. Cobweblike adhesions stretched from floor to ceiling. The adhesions were clipped out, some of the bursal sac removed and the skin wound closed without suturing the bursa. Abduction splint.

After the operation the patient remained in the hospital a week, most of the time using the splint, which was frequently readjusted. Her cowardly and apprehensive temperament made the after-treatment very difficult, but in spite of this the shoulder did well. She could not or would not use the hand, wrist or elbow unless I stood over her and insisted. Under sufficient urging she could use all the muscles, but when left to herself she would let the hand lie in her lap as if it were dead. By Nov. 10 she had recovered enough courage to begin treatment with the Zander apparatus. This was continued at intervals until the following spring.

From the first the shoulder did well, but the hand and fingers were slow in improving. Repeated examinations by Dr. Boehm and myself failed to demonstrate any definite nerve or muscle lesion. We considered it an hysterical paralysis, but in the light of the ultimate result I am inclined to think that it was a case of Volkman's ischemic paralysis.

The patient was again seen on Sept. 8, 1906. The shoulder was symptomatically well, but on careful examination showed about 20° of limitation in external rotation. There was still an evident contracture of the little and ring fingers and a flabbiness of the ulnar flexors.

Case XXII. *Nervous, well-muscled man of fifty-four. Characteristic severe case of Type III.*

Duration of acute symptoms two months when first seen. Chronic symptoms had been present a year.

Treatment. — Incision of bursa by Dr. C. A. Porter.

Result. — Could return to work in three months. Slight limitation of motion persisted a year.

Mr. G. E. G., of Haverhill. Age fifty-four. Massachusetts General Hospital. April 6, 1906. Spare, well-muscled, nervous man. Works in a shoe factory, doing exactly the same work day after day. This work involves raising and lowering right arm continuously. About a year ago he began to have pain in the arm, especially while using it and at night. The pain gradually increased until two months ago, when it became so severe he could no longer work. He had become much debilitated. Examination showed that the motion of the arm was normal in extent, but that there was a painful jog in abduction. There was tenderness at the typical point on the tuberosity just external to the bicipital groove.

Operation by Dr. C. A. Porter on April 7, 1908. The bursa was opened between the fibers of the deltoid. "No fringes nor villi found in bursa, but the surface deeply injected in places with sharp line of demarcation from normal surface. Injected granulating areas touched with carbolic. Bursal sac sewed up with chromic catgut." The arm was put up on an abduction splint for a week. For the next two days it was worn only for a portion of the time and omitted on the ninth day. On this day there was good motion in the arm. He left the hospital on the eleventh day.

He came under my care again about two months later. After the operation the pain had ceased, but after his return home the shoulder became very stiff and continued so in spite of occasional Zander treatments and exercises at home. On June 22, 1906, he presented the characteristic limitations of Type II, although the range of motion was somewhat greater than usually found in Type II. He also complained of more or less pain. Under Zander treatment he gradually improved, so that on July 13, 1906, he was able to return to work. On this date external rotation and abduction were about two thirds of normal. On April 22, 1907, the following note was made by Dr. J. D. Butler in the Massachusetts General Hospital records: "Good scar. Motions of arm limited only in extreme abduction. Can get arm but little above line of shoulder in abduction. No pain or tenderness. Can work as well as ever with arm. Other shoulder is now giving similar symptoms."

Case XXIII. Mr. D. S. Age sixty-five. Massachusetts General Hospital, Aug. 7, 1905. Thin, nervous, tobacco-soaked, Italian cigar maker. For six months has had pain in the right shoulder and sometimes in the left. Characteristic symptoms and signs of Type III, the irregularity of motions and pain being particularly noticeable when the arm is lowered.

Operation at the Massachusetts General Hospital. Usual incision. Bursa incised and lips of wound retracted. On the base of the bursa was a small spicule of bone of triangular shape and resembling a tooth, perfectly bare of periosteum and protruding through the tendon of the supraspinatus. There was no inflammatory reaction about it and the bone itself seemed to be simply an eburnated osteophyte arising from near the anatomical neck. It was easily clipped away with one bite of the rongeur forceps. The wound was closed in the usual manner and the arm fixed in abduction by strapping a forearm splint to the head of the bed.

Convalescence was normal with very little pain and there was almost immediate relief of the symptoms. After the operation there was no interference with motion at any time. When seen on Aug. 28, 1906, he complained of occasional twinges similar to what he had before the operation. A few weeks later even these had disappeared. On Aug. 22, 1907, examination of the shoulder showed normal motion and no tenderness. The patient stated that the operated shoulder was better than the other one, but that there was occasional pain in both shoulders. There was no abnormality of any kind except an unusual amount of creaking in the joint during abduction.

Case XXIV. Miss G. G. Age fifteen. Referred by Dr. Boland, of South Boston, on Feb. 12, 1908. Tall, overgrown girl in good general health with unusually loose and limber joints.

For two years has had pain in right shoulder and down the arm. Constant complaint of pain in doing hair, buttoning back of waist, etc. Pain is also troublesome at night, enough to interfere with regular sleep. In certain uses of the arm a sharp painful "click" occurs. To avoid this "click" the patient has grown accustomed to twist the arm as she abducts it and to abduct the scapula on the humerus before elevating it. When lowering the arm she keeps the scapula abducted on the humerus until the arm is almost at the side and then allows the scapula to come into adduction with the humerus. As this motion occurs there is a distinct hitching as if the joint was set on a ratchet. The fingers held over the bursa during this motion detect a distinct irregularity of surfaces on the tuberosity. The whole shoulder-joint (as well as all her joints) is abnormally loose and flaillike. There is a tender point on the tuberosity which disappears beneath the acromion in abduction. The symptoms have persisted in spite of careful general care and massage. By the kindness of Dr. C. L. Scudder I was able to operate on the patient in his service at the Massachusetts General Hospital.

Operation, March 28, 1908. Usual incision into the bursa. The surface of serous membrane is not particularly abnormal in appearance except for a number of redundant folds, one of which is so large as to produce an obstruction to motion as the tuberosity passes under the acromion. This fold was tough and fibrous in feeling, as if containing chronic inflammatory tissue. Several redundant folds were excised and the incision closed as usual. Convalescence was normal and good use of the arm was obtained by the third week.

On June 12, 1908, examination on this date shows no abnormality in motion of arm except a very slight irregularity of motion as the tuberosity passes under the acromion. There is no pain and the patient has been practically well since the third week after the operation.

Although not strictly cases of Type III, there are certain cases to which Painter has called attention which show in x-ray pictures a deposit of calcareous material in the neighborhood of the bursa. I had the pleasure of seeing Dr. Painter operate on one of his cases (Case III, W. P. D.) on May 17, 1905. Immediately after the operation I made the following notes on the case.

The patient, Dr. D —, is a man of thirty-seven years of age, of heavy (200 pounds) physique and plethoric constitution. His previous history is unimportant, except that ten years ago, after playing baseball all one summer, he used to have a great deal of pain and soreness in his right shoulder-joint. Since that time he has had at intervals a great deal of pain and tenderness in the joint. The pain bothered him particularly at night and was at times severe enough to prevent his sleeping well. He stated that until within a few days he had been able to move his arm without any trouble in all directions: for instance, behind his neck, behind the back and over his head, without especial pain. There have been times, however, when it was difficult for him to raise the hand over his head, but when it was once put in this position it was comfortable for a time. He used to occasionally put it in this position at night; after lying with the hand behind his head for some time, he would then put it down by his side again. In doing this there was always pain during the motion. He recalls at times having his wife wake him just as he was going to sleep with his hand behind his head and tell him to put it down by his side, so that he would not go to sleep in that position and find it stiff on waking. External and internal rotation of the arm could be gone through without giving any trouble whatever.

Eight days ago, while in New York, he suddenly noticed that the point of his shoulder was tender and painful and that the motions were much restricted. He could with difficulty get into his clothes, but could not reach his hip pocket as he had been accustomed to. During these days the soreness had persisted and there had been great pain, sufficient to prevent sleep at night and to require large doses of morphine; the only comfortable position was sitting with the elbow supported. The pain was so great as to make him desire immediate operation.

Examination showed that the external and internal rotation of the humerus on its long axis is restricted about one half the normal arc. Abduction or elevation of the arm is impossible on account of the pain caused in the neighborhood of the greater tuberosity. Attempts at passive elevation of the arm showed that the scapula moves in conjunction with the humerus.

An x-ray from the posterior view shows a pyramidal shadow in the region of the subacromial bursa just above the greater tuberosity and external to the tip of the acromion, the base of the mass being downward and about an inch in length. Between the base and the greater tuberosity is a translucent band about a quarter of an inch wide, occupying the position normally occupied by the tendon of the supraspinatus. The mass is apparently in such a position that the tuberosity could not ride under the acromion without compressing it.

Operation by Dr. C. F. Painter, May 17, 1905.

Under the impression that the mass shown in the x-ray was caused by a calcification either of the bursa or its base, a vertical incision of about two inches in length was made through the skin and between the fibers of the deltoid on the point of the shoulder over the greater tuberosity. When the fascia beneath the deltoid was reached a small opening was made in the subdeltoid bursa and this was enlarged with scissors to an extent great enough to admit the forefinger. The aspect of the bursa was not abnormal inside except for some firm adhesions anteriorly which made it difficult to separate the plane of the bursa from the neighborhood of the bicipital groove and the anterior part of the greater tuberosity. With the finger in the opening, it was found that during the rotation of the humerus a mass corresponding to the shadow seen in the x-ray could be felt to pass beneath the finger. This mass evidently lay at the base of the bursa on the top of the greater tuberosity. An incision was made into it permitting the escape of about half a dram of sebaceous material resembling the contents of a dermoid cyst. The cavity, which resembled a wen or dermoid, was thoroughly curetted and the walls excised. The base of it was evidently the tuberosity and tendon of the supraspinatus; the roof was the base of the bursa. When the sac had been entirely removed, it was found that the motion of the joint under ether was perfectly normal, rotation and abduction being easily performed. The incision in the bursa was not closed and the skin was drawn together with silkworm gut and the arm put in the ordinary sling position.

Remarks. — The point of particular interest in this case is the persistence of the function of rotation in spite of the limitation by abduction. It is obvious that the position of the cyst allowed rotation with comparative freedom, but that attempts at abduction would crowd the cyst between the greater tuberosity and the acromion process and caused pain and spasmodic rigidity of the joint. The acuteness of the symptoms within the last eight days are explained by an inflammatory condition in the cyst. The previous attacks were probably due also to the same cause. That this inflammation did not involve the bursa to any great extent is shown by the persistence of rotation. Since the bursa was not inflamed it would be readily seen that the symptoms which the patient complained of in regard to going to sleep with the arm behind his head can be explained, for the cyst having once got under the acromion was relieved of pressure. In other words, it was only when the cyst was inflamed by over exercise that the presence was noticeable, unless elevation of the arm crowded it between the acromion and the tuberosity.

The relief obtained by this operation was immediate and permanent.

It will be seen by comparing these notes with the description of the operation by Dr. Painter that the calcareous deposit seemed to me to lie not in the bursa, but beneath its base, and in or adjacent to the tendon of the supraspinatus.

I have recently had another similar case in which the calcareous material lay in the same relation to the bursa. Although these are the only cases which I have seen operated on, I have seen this appearance a number of times in the x-ray. Dr. Painter agrees with me on the importance of calling attention to the probable error in his description, for unless the surgeon realized that the mass was beneath the bursa, it might escape his attention.

Case XXVI. Mrs. E. B. S. Age thirty-eight. Referred by Dr. D. T. Percy on May 19, 1908.

Small, wiry, poorly-developed woman. Previous history negative, except that eight years ago had a pelvic operation, probably for pyosalpynx.

One morning, five weeks ago, suddenly found that she could not raise her left arm naturally. She thought that she must have slept on it and kept on using it as well as she could. The pain began to be severe and prevented rest at night. The pain was localized to the left shoulder, down the outer side of the arm and about the insertion of the deltoid.

The tender point, extent of limitation and atrophy were characteristic of Type II. An x-ray plate, taken at the Homeopathic Hospital, showed a dense shadow between the tuberosity and the acromion in the region of the supraspinatus tendon and bursa.

Operation at Eliot Hospital, May 25, 1908.

Incision on the point of shoulder, deltoid fibers separated and bursa carefully opened. The serous membrane was reddened and thicker than normal. On the floor of the bursa, over the insertion of the supraspinatus, at the point indicated by the dense shadow in the x-ray, was a rounded elastic-feeling elevation of about 2 cm. in diameter. This lesion was entirely beneath the bursa, the floor of which had to be incised. The mass consisted of yellowish granular material, resembling the contents of a wen or of a cheesy gland, but more crystalline in character. This material lay on and in the substance of the tendon of the supraspinatus, just at its insertion into the tuberosity. There was a zone of subacute inflammatory tissue about it of about one-half cm. thickness of the periphery.

The granular material was curetted carefully away and the inflammatory zone and most of the subdeltoid portion of the bursa removed with scissors and pared away with a knife. The skin was sutured except for two provisional stitches, but no attempt was made to suture the muscle, the separated fibers of which tended to come together. When the small tumor had been removed motions were free without breaking any adhesions. Convalescence was normal, and she left the hospital in a week with the arm in a sling. No attempt was made to keep the arm in abduction.

Careful cross questioning after the operation brought out no history of injury, but that there had at times been rheumatic pain in the arm. The only cause for chronic irritation had been stenographic work some years before. (I have a number of times seen cases of subdeltoid bursitis in people whose occupation obliged them to use their arms in a slightly abducted position, so that the supraspinatus is obliged to remain continuously in action. This attitude is necessitated in piano-playing, stenography, hand-sewing and many other employments. Such an attitude makes a continuous demand on the tendon of the supraspinatus and if the latter becomes either swollen or atrophied an irregularity of the contour is brought about.)

This patient is still under treatment, but on June 12, 1908, less than three weeks from the date of the operation, the patient states that she is already much better than before the operation. No effort has been made to keep the arm in abduction.

Analysis of the granular material shows that it is chiefly calcium phosphate.

Dr. Wright reports as follows: "Microscopical examination of the material from your case of 'subdeltoid bursitis' shows the following:

The main constituent of the material is a coarse, dense, fibrous tissue. Associated with this is a looser connective tissue in which are inclosed blood vessels and a good many cells of the lymphocyte series. The coarse fibrous tissue in some places contains more fibroblasts than elsewhere, and may, therefore, be considered to be in process of growth at these points. In a few places it is necrotic and it contains very few blood vessels. I cannot find any evidence of tuberculosis. The material seems to me to show a slow productive inflammatory process combined with degeneration and necrosis similar to the process observed in the heart valves in some cases of chronic endocarditis."

To sum up the question of operative interference in cases of lesions of the subacromial bursa, whatever their type, it may be said justly that in a class of cases where we may expect a spontaneous cure in the course of a few months, or at any rate in a year or two, that it is meddlesome surgery to interfere, considering the usual dangers of sepsis and anesthesia which attend any operation.

Certainly it is not the writer's intention to insist that these cases should be operated on, but no one can see the agony which some of them endure without wishing to relieve them. The consent to permit operation is a matter of temperament, some people preferring to suffer night after night rather than permit it, while others seek it rather than suffer a few weeks.

I believe that with improved knowledge and technic the confidence in the efficacy of this simple operation will become more general, and the surgeon will be willing to urge operation rather than simply consent to do it.

SUMMARY.

1. The subacromial bursa and the supraspinatus muscle are of essential value in abduction of the arm.
2. Lesions of the subacromial bursa and of the tendon of the supraspinatus are the common causes of stiff and painful shoulders.
3. Many cases which pass under the diagnoses of contusion of the shoulder, neuritis, peri-arthritis, circumflex paralysis and muscular rheumatism are in reality due to lesions of these structures.
4. The final prognosis of these cases is good, but when pain is severe, or disability is great, relief may be obtained by a simple operation of little danger.

Clinical Department.

A CASE OF DISLOCATION OF THE HIP WITH FRACTURE OF THE ACETABULUM.

BY C. HERMANN BUCHOLZ, M.D.,

Surgeon in charge of the Medico-mechanical and Hydro-therapeutical Department of the Massachusetts General Hospital, Boston.

In the autumn of 1907 I had occasion to operate upon the following case in which I found a very rare lesion. A young man met with an accident in a factory. The large wheel of an engine caught his right leg, turned him about once or twice, and threw him to the ground in an unconscious condition.

When admitted to the hospital he had regained consciousness, but was very nervous and restless and cried at every movement. Examination showed the right thigh quite fixed in the position of flexion, adduction and inward rotation. The diagnosis — dislocation of the hip — seemed clear. There were not apparent any other lesions of bones or internal organs. He was carefully observed for several hours, during which time we delayed in order that the traumatic shock might disappear. Then the patient was given ether and an attempt was made to replace the hip. Several methods were used, but I only succeeded in partially overcoming the flexion and adduction.

Realizing that reduction might be more easily obtained after extension of the leg, I applied an extension of about 50 lbs. for a few days. The result was not satisfactory. Then a second trial to replace the hip was made with the intention of operating immediately if reduction was impossible. This second trial was in vain, like the first. An x-ray picture was made which showed why it was not possible to reduce the hip. Between the head of the femur and the glenoid cavity the picture showed a distinct shadow which seemed to be a part of the acetabulum.

The following day I operated, making an incision like that proposed by Kocher for the resection of the hip, beginning over the great trochanter and running upwards and backwards between the gluteus medius and pyriformis. Having freed the neck and head of the femur a triangular piece of bone was found jammed between the head of the femur and the pelvis. It was obvious that this bone was the upper and posterior lip of the acetabulum. As it was impossible to reduce this fragment of bone to its proper place it was removed. After this the reduction was made without much difficulty. I closed the capsule and then the muscles and skin by deep sutures, leaving a rubber tube at the upper corner of the acetabulum for twenty-four hours.

An extension bandage was applied and the thigh and pelvis put in a plaster of Paris cast, holding the leg slightly flexed and abducted. The wound healed without trouble. The plaster cast was removed after three weeks and careful active motions of the thigh were begun. Eight weeks after the operation the extension bandage was removed and the patient began to walk. Good results followed and four months after the accident, without much difficulty, the patient was able to walk for two hours to the hospital over a rough road. I was not able to examine the case further, and so do not know whether or not there was any permanent limitation of the hip-joint.

The removed fragment of bone was about the size of a child's hand and was a part of the iliac portion of the acetabulum. The cartilaginous surface was about 7 or 8 cm. square.

The above-mentioned lesion is a very rare one. Tillman, in his book, "Lesions and Diseases of the Pelvis," *Deutsche Chirurgie*, has collected the cases up to the year 1904. I have not been able to find in the literature any similar cases since that time.

Tillman divides the fractures of the acetabulum into three groups: (*a*) Isolated fractures. These are mostly in connection with the base. In young individuals separation of the epiphyseal lines of the glenoid cavity may occur. Sometimes the head of the femur is knocked through into the pelvis, a condition called central dislocation. (*b*) Fractures of the acetabulum connected with other fractures of the pelvis, and (*c*) those connected with dislocation of the hip.

In most of the cases collected by Tillman the upper border was broken. The symptoms were similar to those of dislocation, only that a distinct crepitation was felt, a symptom which was not present in the above-reported case, even when energetic movements were made in attempting reduction. In some of his cases it was impossible to reduce the hip or to prevent the head from slipping out of the acetabulum after reduction was accomplished.

By the use of the x-ray diagnosis can be made without any particular difficulty. Usually in dislocations of the great joints, — hip, shoulder and elbow, — the diagnosis is so obvious that we do not make use of the x-ray as I believe we should do in all such cases. We should then probably find at times lesions of the bones not easily demonstrated by a clinical examination.

According to Tillman's report, most of the cases showed very poor results, either because it was impossible to reduce the head into the glenoid cavity or it was impossible to keep it in its position after reduction was accomplished. Some cases reported years ago indicated that operative reduction involved great danger to the life of the patient. Now, of course, with good asepsis, it is possible to operate without much danger.

Again, it may be difficult to retain the reduced hip in its proper place, but as the above case shows, one can remove a comparatively large piece of the acetabulum without any danger of the reduced head's slipping out again. The combined method of an extension bandage with a plaster of Paris cast seems to be the most satisfactory way of holding the femur in its right position and of obtaining good motion.

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Medical Progress.

PROGRESS IN SURGERY.

BY JAMES G. MUMFORD, M.D., BOSTON.

ARTIFICIAL RESPIRATION AND OPERATIONS WITHIN THE THORAX.

ABOUT ten years ago a few farsighted surgeons and investigators began to perceive that we might some day conduct successfully operations upon the thoracic organs — upon the lungs especially, and upon the esophagus. The cavities of the skull and of the abdomen were familiar surgical ground, but the cavity of the chest continued to give us a problem of unique difficulty. It was the problem of controlling movements of air, and in this case of vital air. For many years, although halting progress here and there was reported, this problem seemed as far from solution as the problem of aeronautics. Now, within four years, surgery is showing results in chest work, and good results.

Last June, in Chicago, the Surgical Section of the American Medical Association held an important symposium on the subject of Artificial

Respiration and Thoracic Surgery. Readers who follow the Progress of Surgery may be interested to review this work, and again to take note of the observations and doings of men actively engaged in the research.

We shall consider the formal papers, but first it is well to hear the commentary of G. W. Crile,[1] who opened the discussion on what had been read and demonstrated.

Said Crile: "The ultimate object of artificial respiration is that of affording the fixed tissues, especially the central nervous system, the exchange of gases necessary to life. To accomplish this the circulation and the respiration are *equally* essential. Air-hunger is just as marked in failure of the circulation as in failure of lung ventilation. When the total amount of blood and the vigor of its circulation are above normal, less than normal respiratory effort is needed. For the best results in artificial respiration, then, a good circulation is required."

This is an extremely important observation — an observation familiar enough in general terms to every clinician, but the facts, of which Crile reminds us, apparently are not always in the minds of investigators.

Crile supplemented his statement, already quoted, by warning operators against the too energetic use of artificial respiration, or, as he puts it, the induction of any considerable change in the intrapulmonary pressure, when the patient's circulation is feeble or below the normal. In other words, when the heart is acting badly, it does not do too generously to force the air into the lungs. "There is scarcely any more certain and sudden method of killing an animal than by an excessive intrapulmonary pressure. The circulation in a normal animal may not be much hampered by a certain amount of increased pulmonary pressure, but in the states of low blood pressure the circulation unexpectedly may collapse. Recent experimental research has proved that the circulation of an animal carefully overtransfused with blood from another animal becomes stable, and the blood pressure is raised. Changes in intrapulmonary pressure affect the circulation far less [than in the case of a normal animal], and such an over-transfused animal endures intrathoracic pressure far better [than does the normal animal or the animal with a feeble circulation]."

As we should expect, therefore, there result the following phenomena: "When there is an increased volume of blood, and increased circulating vigor, the respiratory movements diminish. Conversely, when there is a failing circulation, respiratory movements become increased."

As a result of such observations, Crile makes the following practical suggestions: "In planning a hazardous chest operation, if the heart is normal, the chances for a successful issue seem to be greatly increased by first rendering the circulation stable. There are a number of methods whereby a sufficient amount of oxygen may be supplied, but there are few methods that do not in the case of a weak circulation threaten the circulatory stability."

We are to conclude from these reflections that the surgeon may without great difficulty, and by various means, introduce a fair amount of vital air into the lungs. His problem is not altogether solved, however, by such measures. He must see to it that the heart's action is good and the amount of circulating blood abundant when he undertakes a hazardous operation within the chest cavity.

We have to deal with two problems when we consider in general terms the subject of artificial respiration — the problem of ventilating the lungs in the case of an individual whose thoracic wall is intact, and the problem of ventilating the lungs in the case of an individual whose thoracic cavity is open. The common and practical application of the first problem is in the recovery of the apparently drowned.

Prof. E. A. Schafer,[2] of Edinburgh, at the symposium, dealt with this problem in an extremely lucid and informing fashion. After recalling the facts of physiological respiration, — that is to say, that the capacity of the thorax is increased by raising the ribs and depressing the diaphragm, while on the removal of this force the parts return to their original position, — he pointed out that artificially the distorting force can be made to act in an opposite manner by diminishing the capacity of the thorax, forcing air out of the lungs, and then, by removing the diminishing force, allowing the parts through their own elasticity to spring back to the normal. He reviewed the artificial respiration methods of Hall (1857), Sylvester (1858) and Howard (1868), and then described in some detail the work of the Committee of the Royal Medical and Chirurgical Society of London, of which committee he was chairman, appointed to investigate methods of artificial respiration. Schafer's work, which was conducted largely at Edinburgh with the assistance of Herring, of the University of Edinburgh, has demonstrated and put on a sound basis the best present known method of artificial respiration, especially for the recovery of the drowning. The method advocated by Schafer, and called by him the "prone pressure method," has been already reported, yet its application and adoption are as yet by no means general, although it has been warmly endorsed and recommended by the Royal Life Saving Society.

To quote: "In performing it the operator kneels or squats by the side of or across the patient (who lies prone upon his belly), places his hands over the lowest ribs, and swings his own body forward and backward so as to allow his weight alternately to fall vertically on the wrists, and to be removed. In this way hardly any muscular exertion is required. The efficiency of a pressure method of artificial respiration depends upon the fact that, after an ordinary expiration, the thorax still contains some 1500 ccm. of air which can be expelled by a forced expiratory effort. This is the reserve or supplementary air of Hutchinson. It is easy to conceive that one third of this reserve air, i. e., 500 ccm., can be forced out from the chest by pressure and, as a matter of fact, considerably more than that amount can be expelled in the prone position as just described. By repeating the movements — pressure and relaxation — twelve times a minute, we easily get an air exchange of 6,000 ccm. (per minute), which is more than the average normal amount." The normal amount of air exchange per minute has been ascertained to be 5,850 ccm., so that the prone pressure method is admirably effective.

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[1] Jour. Am. Med. Asso., Sept. 5, 1908, p. 182.

[2] "Artificial Respiration in Its Physiological Aspects." Jour. Am. Med. Asso., Sept. 5, 1908.

The curious reader may be interested to learn, from air measurements, how this method compares with the older methods of Sylvester, Hall and Howard. Briefly, pumping by the Sylvester method gives an air exchange per minute of 2,280 ccm.; by the Hall method, 3, 300 ccm.; and by the Howard method, 4,030 ccm.; by the prone pressure method, 6,760 ccm. The demonstration is complete, and we are assured that in cases of drowning this last method has four important advantages: (1) It is efficient; (2) it can be performed without fatigue by a single individual; (3) it is simple and easily learned; (4) it allows the tongue to fall forward, and mucus and water to escape from the mouth, so that they shall not block the air passages, as they may do when the patient lies supine.

Schafer made certain reflections on the value of the prone pressure method in the case of patients in respiratory collapse under anesthetics, and advocated the familiar use of atropine as a prophylactic injection before the administration of chloroform or ether. This use of the drug as a circulatory and respiratory stimulant is in line with the advice of Crile which we have read.

Unfortunately the prone pressure method is not always easy to apply to patients undergoing surgical operations. It may be awkward or impossible to turn such patients on their bellies, so that we must not abandon always the old and excellent methods in common use, or the employment of the bellows to force air into the lungs.

George E. Fell has made some observations on this aspect of the problem, and at the symposium under discussion urged strongly the use of a bellows in suitable cases, especially in opium poisoning: "A boy of sixteen years old broke some ribs while playing ball and took chloroform to overcome the pain. After this he took about 26 or 28 gr. of morphine. . . . I breathed for him through a tracheotomy tube for about eighty hours, and saved his life. . . . I have a pair of bellows of which three movements suffice for the inspiration and three for the expiration in an adult. A valve controls the action. . . . As the air goes from the bellows it passes through a channel out of the valve, tending to produce a slight vacuum. If attached to the lungs it has a slight tendency to draw out air, which aids expiration. When you press down on the valve, the air presses into the lungs. . . . This apparatus illustrates the so-called positive method."

Schafer's important contribution to the subject of artificial respiration leads us directly to methods employed in the solution of the second problem, — aëration of the lungs when the chest cavity is open. Most readers are more or less familiar with the controversy over the "positive" and the "negative" pressure methods. These are matters much debated during the past four years, especially by such writers as Green, Matas, J. B. Murphy, F. T. Murphy and Robinson in America; by Sauerbruch, Brauer, Petersen and Meyer in Europe. These investigators and others have reported a series of animal experiments of varying success, — experiments undertaken with sundry types of apparatus. Few surgeons can show the results of operations upon human beings subjected to artificial respiration. Up to this time the work is tentative, but definite progress seems assured, while the rare reports of operations upon man are of extreme interest.

Let us consider here, and first, the propositions and the claims of that more numerous group of men who advocate a positive pressure method:

Samuel Robinson, of Boston, followed Professor Schafer and described some of the advantages and results of his positive pressure apparatus, a preliminary account of which was published in February of this year.[3] Robinson has endeavored, first, to apply a practical surgical test on animals; second, to refute, if possible, certain objections to the positive method; and third, to improve the application of air compression in order the better to maintain ventilation of the lungs.

He does not use the rhythmical inflation method (bellows), but a steady air compression through the intervention of a simple glass face-mask. Under these conditions Robinson has performed thirty operations on dogs. Some of the operations consisted of opening the chest merely, while in several cases he removed the whole, or portions, of the lung. Nine out of these thirty dogs died from sepsis, but Robinson believes that none of the fatalities can be ascribed to the use of the positive pressure apparatus. He insists especially that the *steady* air compression which he uses is a quite different matter from rhythmical air inflation. Sauerbruch has objected to positive inflation, that it may cause interstitial emphysema, but we see that Robinson meets this objection by the employment of a steady pressure. The lung is never allowed to become collapsed, and so it need never suddenly be blown up.

Again, in regard to the danger of paralysis of the circulation, Robinson states that he has performed twenty-five blood-pressure experiments with this danger in mind. He used dogs under ether anesthesia, without morphia, with the result of satisfying himself that serious circulatory disturbances do not occur through the use of his apparatus when properly regulated. The practical surgeon, however, reflects that this investigator was experimenting upon relatively normal dogs.

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[3] "Experimental Surgery of the Lungs." Ann. Surg., February, 1908.

Incomplete oxygenation of the blood has been charged against any positive pressure method, and we are reminded that this criticism has been urged especially against Brauer's method. Robinson asserts that such a condition resulting in cyanosis and dyspnea is avoidable and is due to the unskillfulness of the operator: "The more frequent cause of dyspnea in these cases is incomplete ventilation of the lung alveoli, due sometimes to the insufficient supply of oxygen, but more often to the stagnation of carbon dioxide, the escape of which is not adequately provided for, either in the construction of the apparatus or in its manipulation." If both sides of the chest are opened, the respiratory excursion must be extremely slight and produced by the diaphragm only. There results a tendency to the over-retention of carbon dioxide with a slowing of the pulse, and dyspnea. Under such circumstances Robinson has employed successfully the accessory ventilation method of Volhard and Sollman — the introduction of oxygen into the lungs through a catheter inserted into an independent tracheotomy wound. Further, Robinson has succeeded in keeping up a circulation of air and in flushing the alveoli throughout by increasing the pressure, and rapidity of flow of the afferent fresh air by using higher compression and by diminishing correspondingly resistance to the efferent air so that the lung inflation has been maintained.

As a result of his 30 operations under positive pressure, Robinson reports 70% of recoveries. He finds that emphysema and circulatory changes do not occur when his apparatus is properly regulated, while he urges provision for the escape of deoxygenated air.

(*To be continued.*)

Reports of Societies.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

The Thirty-Fourth Annual Meeting was held at Louisville, Ky., Oct. 13, 14 and 15, 1908, with the President, Dr. Arthur R. Elliott, of Chicago, in the chair.

(Continued from No. 22, p. 729)

ETIOLOGY AND PATHOGENESIS OF PANCREATITIS.

Dr. William D. Haggard, of Nashville, Tenn., in opening a symposium on this subject, said that gallstones were etiologically associated with pancreatitis in nearly one half of the cases. Anatomical peculiarities and variations of the terminal pancreatic ducts were the determining factors in the occurrence of pancreatitis in some cases of gallstones and not in others. The lodgment of a stone in the ampulla of Vater temporarily or permanently causing the retrojection of bile into the pancreatic duct (Opie) produced acute hemorrhagic pancreatitis. The chronic indurative or interstitial type was caused by stones lodged in, resident or escaping through the common duct. Bacterial invasion was secondary to some unphysiological or mechanical internal injury. Infection of the pancreas by the lymphatics in cases of cholecystitis was probably a more frequent avenue than by continuity. Gastroduodenitis appeared to be responsible for about one third of the cases. Catarrhal jaundice was probably caused by inflammatory swelling of the head of the pancreas, compressing the common duct of the liver in many instances. Mumps caused about ten per cent of the cases of pancreatitis, and some other infections might likewise cause it by metastasis. Fat necrosis with acute hemorrhagic pancreatitis was caused by some injury of the gland cells, access of bile or enterokinase which activated the hemolytic property of pancreatic juice.

THE DIAGNOSIS OF PANCREATITIS.

Dr. A. J. Ochsner, of Chicago, presented a short review of the methods of diagnosis, giving the symptoms established by Fitz, Robson, Mayo, Moynihan, Opie and others; the chemical examinations made by Cammidge, Lepine, Mueller, Solomon, Cloesser and others. He also directed attention to an area of tenderness on deep pressure over the upper portion of the right rectus abdominis muscle to the right of Robson's point in the presence of pancreatitis complicating cholecystitis. This area was not so circumscribed as Robson's point and correspondnded nearly with the area of tenderness in duodenal ulcer. Especial stress was laid upon continued, careful examination of the pancreas in all surgery of the upper portion of the abdominal cavity in order to obtain reliable statistics.

Dr. J. Henry Schroeder, of Cincinnati, Ohio, discussed the physiology and chemical pathology of the pancreas in pancreatitis.

PANCREATIC DIABETES AND ITS RELATION TO GALLSTONES.

Dr. Alfred C. Croftan, of Chicago, called attention to the fact that the peculiar interrelationship existing between gallstone disease and pancreatic diabetes was important clinically, chiefly for three reasons: First, because cases of persistent, usually very intractable, glycosuria occurred that ran their course under the guise of an idiopathic diabetes mellitus but that were in reality due to gallstone factors; second, because cases occurred which presented all the essential clinical features of cholelithiasis, accompanied by continuous or intermittent glycosuria, which were in reality cases of chronic pancreatitis and not at all of gallstone disease; third, because the two disorders occurred together much more often than was generally assumed and produced a complicated disease picture that was highly confusing and very commonly misinterpreted.

The identification of a glycosuria as due to pancreatic diabetes was uncertain, because it implied the hazardous diagnosis of pancreatitis, which was especially difficult when gallstone disease complicated glycosuria, as hepatic insufficiency *per se* often produced alimentary glycosuria which was genetically independent of pancreatic disease.

The author expressed himself as follows in regard to the frequency of pancreatic diabetes: "Glycosuria (pancreatic diabetes) is a much more common symptom in acute pancreatitis and at the onset of pancreatic disease, especially when associated with cholelithiasis, than in later stages. In occlusion of the pancreatic duct, with damming back of the pancreatic secretion, glycosuria is rare, for the islands of Langerhans seem to resist this insult very well and only undergo degeneration when nearly all the other glandular elements of the pancreas are destroyed. In individuals with a diabetic heredity the occurrence of glycosuria is much more apt to take place in even slight pancreatic involvement. Occasionally the administration of a diabetic test meal demonstrates the existence of a reduced tolerance for carbohydrates. The glycosuria is a symptom of peculiar value in pancreatic disease, its presence being indicative of pancreatic involvement, its absence not necessarily invalidating this diagnosis."

Attention was then called to pancreatitis simulating cholelithiasis. In addition to cases of pancreatitis in which cholelithiasis was simulated, we had much more frequently a combination of the two diseases with glycosuria, in which the latter must properly be specified as due to pancreatic diabetes. In all such cases the prognosis of the diabetes was, as a rule, better and the treatment quite different than in the so-called ordinary idiopathic type of the disease.

In interpreting the occurrence together of pancreatic diabetes and gallstones, three possibilities were considered: (1) The gallstones might precede the pancreatitis; (2) the disorder about the pancreas might be the cause of the gallstone formation; (3) both the gallstones and the pancreatic diabetes might be due to some common cause acting simultaneously upon the liver and the pancreas.

The medical treatment of pancreatic diabetes, especially when complicated with cholelithiasis, was declared to be exceedingly unsatisfactory. An exploratory laparotomy in any suspicious case was almost invariably indicated. Attention was called to the good effects of laparotomy *per se*, the benefits to be derived from removal of hepatic concretions and the better drainage of the abdominal cavity. Special stress was laid upon the fact that in cases of this type the presence of pancreatic diabetes in no way contra-indicated laparotomy.

THE SURGICAL TREATMENT OF PANCREATITIS.

DR. WILLIAM J. MAYO, of Rochester, Minn., said that immediate operation offered the best prospect of cure in acute hemorrhagic pancreatitis. While the mortality was very high, it was not prohibitive. If operated on very early, a greatly swollen pancreas would be found which should be incised in several situations and free drainage furnished. Fat necrosis, the result of leakage of pancreatic ferments, was not necessarily a fatal condition. He had operated upon a number of such cases in the convalescent stage. Localized septic accumulations in the pancreas should be opened and drained. If gallstones were present, they should be removed and biliary drainage furnished. The surgical treatment of subacute pancreatitis presented a much more favorable field, as the patient had lived through the most dangerous period and had developed great resistance. The fundamental principle of the surgical treatment of chronic pancreatitis consisted in relieving the common duct of as much of its bile-carrying function as possible. In 62% of cases jaundice would be present because the common duct ran through the head of the pancreas. In 38% the common duct lay behind the pancreas, but would usually be found more or less dilated, often without jaundice, in all cases of chronic pancreatitis. In the large majority of cases gallstones in the gall bladder or bile duct were the direct cause of the chronic pancreatitis. In September, 1908, with 2,611 operations upon the gall bladder and bile tract (operated on by Drs. Wm. J. and Chas. H. Mayo) the pancreas was coincidentally involved 200 times, or 7.6%. In 325 operations on the common and hepatic ducts, the pancreas was involved in 22%. With gallstones in the common duct, 84 per cent would have a contracted gall bladder from the connective tissue in the gall bladder, the result of gallstone irritation. When the chronic pancreatitis was not the result of calculi, the gall bladder would usually be distended. Chronic pancreatitis, when caused by gallstones, would usually be cured by the removal of the stone and temporary bile drainage. When not caused by stones, cholecystenterostomy was indicated. This latter operation had a large field of usefulness. For this reason the gall bladder should not be removed in gallstone disease if there were indications of complications in the ducts of the liver or pancreas, so that secondary cholecystenterostomy might be done, if necessary. The gall bladder had two important functions: First, the secretion of mucus, which rendered the bile less irritating; second, the relief of tension in the common duct. Both tended to prevent pancreatic complications.

CURRENTS AND COUNTER-CURRENTS IN MEDICAL ADVANCE.

The President, DR. ARTHUR R. ELLIOTT, of Chicago, chose this as the title of his address. He referred to the education of the public by the medical profession and agreed with President Burrell, of the American Medical Association, that public instruction should be placed in the hands of a special board; that it should not be taken up by the profession generally; that everything put out should be carefully edited, in order to exclude the sensational and misleading; that the question of the treatment of disease other than preventive should be avoided. The future of medical education of the laity rested in the proper instruction of the young, and this manifestly must be carried on in the schools. Intellectual reform after adolescence was difficult. Few of our present patients would ever rightly understand our principles or our method, the reasons for our successes or the explanation of our failures. What they did understand was personal character on the part of the doctor, honesty and good sense, kindness and sympathy, liberality and benevolence to rich and poor.

Conceding the necessity for a systematic policy of instructing the public in matters of personal hygiene, public health and the prevention of disease, we should not lose sight of the fact that our influence for good with patients depended very largely on the degree to which we were able to retain a personal hold upon their confidence and loyality. Despite the diffusion of medical knowledge among the laity and attempts to stimulate an intelligent interest in and appreciation of efforts on behalf of the community, physicians appeared to be making little headway in the esteem of the public. Too often there was encountered on the part of the public either a spirit of indifference or a disposition to be hypercritical. One contributing factor rested in the weakening of the personal bond, the respect and good understanding existing between doctor and patient. No one acquainted with the tendencies of the times would blame the doctor for this, and yet it might be asked whether in the scientific devotion of the last two decades physicians had not allowed their relations with the public to become too impersonal.

During recent years there had been a tendency to more and more base not only diagnosis and prognosis, but treatment, on the results of laboratory research, on information obtained by instruments, rather than on the knowledge gained of specially trained senses and clinical judgment ripened by experience. Careful clinical observation could not be substituted by laboratory investigation or by mechanical aids. The ideal training of the physician was based as largely on the correct observation of clinical facts as upon skillful interpretation of laboratory findings. He who neglected the latter source of knowledge denied himself an invaluable aid to diagnosis, while he who undervalued clinical observation and depended too exclusively on the laboratory became a perfunctory observer, a neglectful watcher of the sick and soon lost his sense of clinical values.

TROPICAL DISEASES AND THE MISSISSIPPI VALLEY.

Dr. George Dock, of New Orleans, La., delivered the address in medicine. He emphasized the importance of thorough instruction of medical students in the nature, recognition and treatment of tropical diseases. A pressing need was a more extensive activity in the investigation of tropical diseases in the United States. The valuable results of the schools of tropical medicine of Liverpool, London and Hamburg showed what might be done and what should be done by all countries having similar problems to deal with.

There was a great activity in the search for new methods of treatment of many tropical diseases. Synthetic drugs, sera and vaccines were being thoroughly explored as they should be, but the most important part of the treatment was preventive. The essentials for this were quite the same in the case of tropical diseases as they were in those of temperate zones. They consisted, briefly, in keeping uncontaminated air, water and soil, the extermination of vermin, both large and small, and the preservation of the general health at the highest possible pitch.

In the carrying out of a campaign for the prevention of disease, it was obvious that much could be gained by having the general direction in the hands of a federal officer, a consummation now near realization. But even more important than this was the recognition of the need of a more distinct and definite effort all over the country. It was in this regard that physicians had a serious and important duty, not by telling people what to do, but by letting them know, as they themselves knew, why the changes should be made. Having the knowledge of what should be done in a general way, it would be easier to place the actual work in the charge of experts.

THE PRESENT STATUS OF KIDNEY SURGERY.

Dr. Arthur Dean Bevan, of Chicago, selected this subject for the address in surgery. He presented a brief résumé of the change in kidney surgery and drew an outline of the surgery of the kidney to-day.

Floating or movable kidney was first successfully handled by surgical treatment when, in 1880, Hahn introduced the operation of nephropexy. This operation had now been extensively employed and had given very satisfactory results where it had been undertaken in suitable cases.

Since Henry Morris, in 1880, did the first nephrolithotomy there had been a steady improvement in the surgical treatment of kidney stone. Since the introduction of the x-ray this development had been much more rapid. The diagnosis of kidney stone could now by the means at our disposal, intelligently employed, be definitely determined before operation and the modern operative technic had made it possible to remove renal calculi in uncomplicated cases with a very low percentage of mortality. In the author's series of 52 operations done for kidney stone he had had but one death from nephrolithotomy and two deaths from secondary nephrectomies.

With reference to tuberculosis of the kidney, the disease is in 90% or more of the cases at first unilateral and limited to a single kidney. There should be a distinct line drawn between genital and urinary tuberculosis. Urinary tuberculosis begins always in the kidney and then later descends into the ureter and invades the bladder. Early diagnosis was of extreme importance in kidney tuberculosis. The diagnosis must determine the original focus, whether one or both kidneys were involved, whether the bladder was involved and to what extent and whether there was involvement of other organs, as the lungs, in the tuberculous process.

The author, in discussing the treatment, said that three methods had been advocated, namely, the general hygienic treatment, which was employed in lung tuberculosis; second, the specific treatment with tuberculin; and, third, the surgical treatment. Primary nephrectomy for early unilateral kidney tuberculosis could be done with less than 5% of mortality. In unilateral renal tuberculosis early nephrectomy was the best treatment. This should be combined with the well-recognized hygienic treatment of tuberculosis. In bilateral renal tuberculosis the treatment should be hygienic, plus the specific treatment with tuberculin, until at least the value of this method had been proven or disproven, and in some cases where especially indicated, such palliative surgical measures as nephrotomy and drainage might be of serivce.

The author then discussed neoplasms of the kidney, and reported three cases of hypernephroma.

He likewise discussed acute hematogenous infections of the kidney, hydro- and pyonephrosis, essential kidney hemorrhage, anuria, after which he stated that modern surgery could now offer much in the treatment of many diseases of the kidney. Progress was being made rapidly and one could hope that the future would add much to that which had already been accomplished. Diseases of the kidney belonged for the most part to that borderland which must be cultivated by both the physician and the surgeon in order to bring forth the best fruit. The physician who handled these cases should keep in close touch with the surgical progress being made. He should follow the case to the operating table and see for himself *in vivo* the pathological conditions which were responsible for the symptoms present. The surgeon must understand fully the value and possibilities of medical treatment before he could arrive at a true estimate of the value of surgical procedures.

THE X-RAY DIAGNOSIS OF STRICTURE OF THE ESOPHAGUS.

Dr. Sidney Lange, of Cincinnati, Ohio, read a paper on this subject. The fact that organic and spasmodic strictures may have points in common and may be combined and the fact that in neurotics, in valvular heart disease and in mediastinal tumor cases the passage of stomach tubes and bougies are distinctly dangerous, establishes the value of the x-ray method. It consisted in giving a small bismuth capsule, a large bismuth capsule and then several swallows of bismuth mush. From a study of the act of deglutition itself any obstruction to the passage was at once evident; the size and extent of the obstruction and whether organic or spasmodic could be determined.

Weak or deficient peristalsis was registered by the stoppage of the bismuth capsule and thus an early diagnosis was possible before the stomach tube met with resistence and even before dysphagia was present. Increased mediastinal pressure could thus be recognized early by the stoppage of the bismuth capsule in the esophagus. There existed a sphincter at the entrance of the esophagus as well as at the cardia. Instrumentation often served to increase the spasm of these sphincters. The non-irritating bismuth mush would relax it. The method was based on the examination of sixteen cases of esophageal obstruction.

A RESUME OF THE VARIOUS METHODS OF TECHNIC FOR DISLOCATED KIDNEY AND THE APPLICATION OF EACH.

Dr. Earl Harlan, of Cincinnati, Ohio, in discussing operative indications for dislocated kidney, as advocated by the majority of authorities in this field of research, enumerated the pathological conditions and symptoms. He emphasized the fact that dislocations of the left kidney were more common than formerly supposed, but were more frequently overlooked on account of the absence of gross pathological manifestations such as accompany dislocation of the right kidney, namely, appendiceal, bowel, gall bladder, stomach and duodenum, and stated that these cases should be carefully sought for in the presence of severe neuroses by the use of the Luy's bilateral ureteral collector and measurement of the solid material excreted by each kidney.

The writer followed with a carefully prepared table of the operative steps and measures which have been employed in fixation of the kidney from the time of the first operation by Dowell, of Galveston, Tex., in 1874, to the present, including a description of the technic as used by the most prominent authorities in this work at the present time, with a discussion of the merits of the several methods and their application.

In presenting a description of the methods of those who have had large experience in operating for dislocated kidney, the author gave a brief summary of the most successful.

The writer ventured the prediction that in the near future all posterior operative procedures and all operative procedures intending to fix the kidney would be obsolete and only those methods applied which corrected dependent pathology, would relieve and replace an obstructed ureter, eliminate the pocket and support the kidney at its lower pole while making sufficient correction of a disabled peritoneum to prevent either the upper or lower pole of the kidney from protruding into the peritoneum or bowel.

INTERNAL URETHROTOMY; ITS INDICATIONS AND TECHNIC.

DR. FERD. C. VALENTINE and DR. TERRY M. TOWNSEND, of New York, maintained that the vast majority of strictures of the urethra were better treated by methodical dilatations than by any other method. They specified among the principal indications for internal urethrotomy: urethral calculi; vesical calculi amenable to crushing; ureteral or renal involvements requiring ureteral catheterism; strictures of so irritable a character that instrumentation caused severe reaction; strictures whose resiliency prevented adequate dilatation; heavy callus upon which dilatations made no impression; all strictures of the anterior two thirds of the urethra; strictures in patients who could not be regularly treated by their physicians; patients who could not be taught asepsis or who were too awkward to safely intrust with sounds; those who would not refrain from sexual intercourse or alcohol; those who would have to be maintained in a hospital for the long period required by dilatations and internal traumatisms from forcible instrumentation.

They recited the steps of urethrotomy from the induction of urinary asepsis through vesical asepsis, urethral antisepsis and its difficulties, the uselessness of general anesthesia, the relative value of local anesthesia, the patient's position and the choice of urethrotomies. They classed the instruments anterograde and retrograde instruments. Of the former they gave preference to the Maisonneuve and the Fluhrer-Maisonneuve urethrotomes and detailed their construction and use. Of the anterograde instruments, they employed the Albarran urethrotome when the stricture was too tight to admit the Otis, and the latter when sufficient division was not obtainable by the former. The Kollmann bougie-a-boule urethrotome was employed by them in heavy strictures to make them thereafter amenable to dilatations, and the Oberlander intra-urethroscopic knives when mere division of fine stricture bands partly encircling the urethra was demanded. After thorough division of the stricture by any instrument, they anchored fast a cut-off catheter for forty-eight hours to insure vesical drainage to protect the incision from infection by possibly septic urine and to prevent agglutination of the lips of the wound.

INCIDENCE OF GALL-BLADDER TROUBLE IN GASTRIC ULCER; THE DIFFERENTIAL DIAGNOSIS; REPORT OF CASES.

DR. J. A. LICHTY, of Pittsburg, said there was no doubt as to the occasional existence of these two lesions in one patient. For clinical purposes he divided the cases into three classes. The first class included those in which the ulceration of the stomach and gall-bladder trouble occurred entirely independent of each other and complications in either did not seem to have any apparent bearing upon the symptoms of the other. The second class included cases in which the gastric ulcer was primary and the gall-bladder and duct lesions were apparently secondary, due to adhesions or other complications which gave rise to interference of function of the biliary tract. The third class included cases in which the gall-bladder trouble was primary and the complications caused such symptoms as were usually found in cases of chronic gastric ulcer.

In differentiating between gastric ulcer and gall-bladder trouble, he referred briefly to the topographical anatomy of that region, in which lay the gall bladder and ducts and that portion of the stomach which was most likely to be ulcerated. He then considered some of the distinguishing symptoms of simple gastric ulcer and gall-bladder trouble, referring to the usual and common complications and finally comparing their symptoms for the purpose of differentiation.

Conclusions: "1. The coincidence of independent gall-bladder trouble and gastric ulcer is rather rare, only one in 321 cases of my series. 2. Gastric ulcer with its complications can easily cause an interference with the function of the gall bladder and duct to such an extent as to produce definite gall-bladder pathology. 3. Gall-bladder disease with its complications may cause such a disturbance of gastric function as to simulate, if not actually cause, gastric ulcer. 4. While a combination of these two lesions may produce a complexity of symptoms, which makes a definite diagnosis impossible, the indications for operative interference are usually so definite that to disregard them would be disastrous to the patient."

GASTRIC ULCER, WITH SPECIAL REFERENCE TO ITS PRECANCEROUS INFLUENCE.

DR. W. D. HAINES, of Cincinnati, said the belief that chronic ulcer of the stomach was often followed by carcinoma was founded on evidence obtained at the operating table and in the dead-room. The frequency of chronic ulcer as compared with carcinoma of the stomach might be shown by quoting from Virchow, who declared that over one third of all cases of carcinoma were located in the stomach wall, and competent evidence showed that carcinoma of the stomach was preceded by ulcer in varying degrees of frequency, ranging from thirty to one hundred per cent.

It was the deep perforating ulcer which healed slowly or remained as a raw surface that most concerned the surgeon in considering the precancerous influence of gastric ulcer. Carcinoma of the stomach extended to other tissues through the lymph channels, blood vessels, continuity of structure and by peritoneal metastases. While the possibility of cancer developing on the site of an ulcer was recognized nearly a century ago, and clinical and post-mortem examinations since that time had demonstrated that from 14 to 26% of cases dead of gastric carcinoma showed ulcer histories, it remained for stomach surgery to fix the frequency with which cancer developed on the site of gastric ulcer. Cancer had no symptoms, hence the difficulty in diagnosing the disease in the earliest stage, at a time when operation would promise most favorable results. Anorexia, pain and hematemesis were symptoms which might be present in both ulcer and cancer, but were pathognomonic of neither.

In dealing with chronic stomach ulcer it should receive the same consideration one would give a breast tumor, uterine fibroid or other growth, which past experience had abundantly proven was prone to undergo malignant change. The excision of the ulcer-bearing area, as recommended by Rodman, was the operation of choice when the surrounding circumstances would admit, because excision offered most in the way of permanent benefit to the patient. Furthermore, the operative mortality would be reduced as experience increased until excision would compare favorably in this respect with the simple drainage procedures.

(To be continued.)

Book Reviews.

Obstetrical Technique. By Joseph Brown Cooke, M.D., Adjunct Professor of Obstetrics in the New York Polyclinic Medical School and Hospital, etc. Illustrated. Sixth edition, enlarged and fully revised. Philadelphia and London: J. B. Lippincott Company. 1908.

A most valuable little book, convenient in size and of easy style. It gives the student a clear description of a proper technic for the management of an obstetric case. The italicized sentences will do much to drive home the author's many good suggestions. His preparations for labor, his obstetrical bag and box, the latter a most excellent plan, formidable and unnecessary as they must seem to many, can in no way be reduced if the physician wishes to be regarded as a first-class man. The one weak chapter in the book is that on Cesarean section, and the reviewer cannot but wish the author had omitted it entirely rather than to have had him make many of the statements which he has. The reviewer hopes that this edition is not to be the last, as the author intimates in the preface.

R. L. DeN.

Syphilis. A Treatise for Practitioners. By Edward L. Keyes, Jr., A.B., M.D., Ph.D., Clinical Professor of Genito-Urinary Surgery, New York Polyclinic Medical School and Hospital; Lecturer on Syphilis, Cornell University Medical School; Surgeon to St. Vincent's Hospital. With 69 illustrations in the text and 9 plates, 7 of which are colored. New York and London: D. Appleton & Company. 1908.

This book is based upon 2,500 cases of syphilis "observed and adequately recorded" in the office books of Dr. Keyes, the elder, and his associates during the past forty years. One of these associates, his son, is the writer of the book. In an admirably written short preface he says that "the contemplation and tabulation of the cases has proved most valuable, not so much for the statistics derived from them as for the point of view they have enforced and elucidated." This point of view, as well as the simplicity and forcefulness of the author's English, the judicious way in which he has made use of his illustrative cases, and the discrimination he has displayed in leaving out unnecessary masses of statistics, all recall the elder Keyes in the pleasantest way, and show an inheritance of which the author may well be proud. Adequate briefness is the pervading quality of the whole book. The chapters are all short and yet one is constantly reminded of and impressed by the amount of information they contain. Chapter I, for example, on "Syphilis in Relation to Public Health," gives in ten pages a summary of the subject which alone would make the book worth while. Chapter III, in the same way, gives us in 12 pages a most excellent idea of our present knowledge of the etiology of this disease. The 36 chapters into which the work is divided cover most adequately the whole range of syphilitic manifestations as they occur in all parts of the human anatomy, and yet they are kept down to less than 550 pages. The illustrations are, for the most part, excellently executed photographs; the publisher's work has been well done, and the book seems to the reviewer as nearly a model treatise as any he has seen for a long time.

Genito-Urinary Diseases and Syphilis. By Edgar G. Ballenger, M.D., Lecturer on Genito-Urinary Diseases, Syphilis and Urinalysis, Atlanta School of Medicine; Editor, *Journal-Record of Medicine;* Genito-Urinary Surgeon to the Presbyterian Hospital, Atlanta, Ga. Atlanta Ga.: E. W. Allen & Company. 1908.

The writer of this book declares in his preface that his hope in writing it has been to obviate the disadvantage under which he believes the student of medicine frequently finds himself, "on account of either the minute detail of large and comprehensive works, or the omission of important facts from smaller manuals and quiz compends." We question the value of such books as this, and we doubt if such concise, well-arranged and easily acquired summaries of knowledge are of lasting value to the student. The author has, however, certainly attained his object, for in this book of 259 pages, with an index and bibliography, he has provided an up-to-date, well-compiled summary of our knowledge of genito-urinary diseases and syphilis. The book is of far greater value than are most of the quiz compends and manuals so commonly seen, but it can in no sense be taken seriously as a comprehensive textbook. It will, undoubtedly, help many weary medical students to pass better examinations than they would (not could) have passed without its aid.

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INSANITY IN ENGLAND.

There is much pregnant suggestion in the report recently published by the English Commissioners in Lunacy; the data concerning insanity in England and Wales have therein been brought up to the beginning of the present year. In these countries the unsound of mind increased numerically, but not relatively, in 1907. There were, on Jan. 1, 1908, 126,084 persons certified as insane and under care, 2,096 more than were thus certified on the previous New Year's Day. Between 1904 and 1905, however, the annual increase was 2,630, and the average annual increase for the ten years ending with 1907 was 2,411. On Jan. 1. 1908, more than 74% of the above total number of "reported lunatics, idiots and persons of unsound mind" were being maintained in county and borough asylums; 10,112 were being treated in private institutions. Nine hundred and eighty-three were criminal lunatics under care. We imagine the proportion among us would be somewhat larger.

The rate of increase in the number of lunatics was lower in rural districts than in towns; it was highest in and about the metropolis. This latter is a not unfamiliar phenomenon. The rural life is certainly the more normal for the human animal, as for others; it is all the more so for humankind in this generation, because there are now so many delightful ameliorations of the monotony of farm life, which was formerly so dreary and deadly depressing. There are now cheap newspapers and cheap magazines, the telephone, the gramophone (or its British equivalent), the pianola, the moving picture and the trolley. Under the influence of such modern inventions as these many a rural district has taken on the nature of a suburb. In great cities, on the other hand, the fierce struggle for existence, the madding crowd, the keen competition, in which the unfit must so inevitably succumb, — these things tend to unhinge the weak mind and predispose to insanity.

It would seem at first thought ominous that, although this report finds the number of insane to have been slightly smaller in 1907 than the average of the last decade, the rise in the number of the certified insane since 1859 has been from 36,762 to 126,084, or 243%; whereas the estimated increase in the general population of England and Wales in the same period has been only 79.6%. This should not necessarily argue an absolute increase of insanity, for refinements of diagnosis have been obtaining of recent years by which cases of mental disease have been detected much more frequently than formerly. Our diagnoses are not now so vague, for we now make them, or at any rate we seek to base them, upon material cerebral lesions by the employment of precise methods (the value of which is gauged by autopsy findings) and by vivisection experiments. The science of statistics was then but a sickly babe. Moreover, "nerves" had not yet been invented in the time of our matter-of-fact forbears. And our medical experts, with the aid of astute lawyers, have since evolved a more elaborate insanity nomenclature. So that, what would in the generation preceding ours have been considered mere oddity, might now be construed into some peculiar type of psychic disease. Nevertheless, with the increased and ever-increasing complexity of our civilization there is proportionate perturbation and strain, with no doubt corresponding increase in mental disease.

A most suggestive finding of the English commissioners is that nearly two thirds of the persons annually certified to be insane are suffering from a first attack of mental unbalance. The remainder were cases reconsigned to asylums, public or private, their recovery having, therefore, been but transient. The most potent circumstance tending to recurrence, especially among the sufferers specified as being of the "working classes," seems to have been the return to the old vocations and environments under which their minds were broken down. Yet it is stated that, even though subjected anew after asylum treatment to the antecedent and predisposing conditions, no small proportion do recover and resume active work without again requiring to be segregated. This factor is too obvious to need dilating upon. It is as when the consumptive, whose disease has been arrested under sanatorium regime, must perforce return to the squalor, the exhausting labor, the overcrowding and the infected environment in which he succumbed in the first place, his maintenance of health under such circumstances is hardly to be hoped for.

How do English asylums, public and criminal, compare with some of our own? In a report of the Royal Commission on the Care and Control of the Feeble-Minded recently published in London will be found the observations of certain of its members who inspected our institutions in Massachusetts, New York, New Jersey, Pennsylvania, Maryland, Ohio, Indiana, Delaware and Washington, D. C. Within these commonwealths there was found, of course, much diversity of regulation and practice; it was concluded, on the whole, that public asylums for the insane are better designed and more successfully managed here than in most such institutions in England. It was found that among us a large proportion of the patients are permitted absolute freedom; that it is sought in every way possible to provide recreation and useful employment as an adjuvant to the relief or the cure of the psychic aberration; that in our asylums the proportion of medical men to the rest of the staff is generally higher than in English institutions; that in the organization of our state institutions there is a conspicuous share taken by women in the management of those which receive women inmates; that much more progress has been made in the United States than in England toward the control of feeble-minded women of childbearing age.

A most discerning statement was made by the English visitors regarding the observation pavilions which had been erected in New York and Brooklyn institutions for the reception of persons appearing to be suffering from mental disturbance; in these pavilions such patients can be carefully studied before being committed to an asylum. Nothing can be wiser than this plan. It would appear to us that nothing could be more deplorable nor disastrous to the welfare of such a patient, if he be but slightly erratic or mentally overwrought or merely perturbed, than to have hi lot cast at once among maniacs or melancholics. We who are normal could not, such is the truly dreadful influence of suggestion, view for ourselves a prospect of this kind without something approaching terror. What would be the effect of such a commingling upon those who may prove upon examination to be but slightly abnormal? Moreover, the subsequent stigma upon the patient, his family and his posterity, of having once been in an asylum for the insane should never have to be incurred by any one in whose case the diagnosis of insanity is not as certain as it is possible to be made, even in the difficult field of psychiatry.

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REPORT OF THE SURGEON-GENERAL OF THE UNITED STATES NAVY.

The yearly report of the surgeon-general of the United States Navy demonstrates in a forcible way not only the work being done by the medical men of the navy, but also the increasing opportunities which the service is offering. Through these greater inducements there is an improvement in the personnel of the medical corps over the preceding year. Ninety-seven candidates presented themselves for examination during the year, and of this number thirty-nine appointments as assistant surgeons were made, leaving fifty-one vacancies. The discrepancy is certainly striking between the number of candidates and the number who succeed in qualifying, but it is maintained, and we have no doubt with reason, that the standard of professional qualification is not too high. The situation evidently changes for the better year by year, but it remains a misfortune that the service cannot be made so attractive to desirable men that the vacancies may be easily filled. We have repeatedly reverted to this question in the past and are still of the opinion that certain somewhat radical changes must be made before qualified men can be found who are willing to devote their entire lives to this public service. The naval medical school continues successful. It has now finished its sixth session, and there were thirty-five student officers in attendance during the last term. Much pains has been taken in the instruction given, and the curriculum has been still further developed in scope during the last year. Of this school the report says, "The conviction has been reached that the naval medical school represents one of the most potent influences for good which the service possesses. Indeed, the growing efficiency of the work of the medical department in every direction must be evident to all, and this is certainly due in great part to the school."

In order to combat the impression that the life of a naval medical officer is one of scientific stagnation, there has been much discussion of educational possibilities for officers throughout their service, and every attempt has been made to supply similar advantages to those obtainable under civil conditions. To this end post-graduate courses have been provided at the naval medical school, medical associations have been encouraged, the value of medical periodicals has been clearly recognized, and a journal entitled *The United States Medical Bulletin* has been issued and widely circulated.

We regret to notice that Congress has again failed to enact a measure authorizing the employment of dentists for service in the navy. Again and again legislation has been attempted of this sort, but failed of enactment. Such conservatism is unquestionably unfortunate and imposes a distinct obstacle in the work of the medical corps toward preserving the health of the service. On the other hand, also after considerable effort, authority has been secured to establish a corps of female nurses. This it is believed will greatly enhance the efficiency of the medical department and make possible more adequate nursing of the sick. The hospital corps will lose by this change nothing of its prestige and will be further developed and improved. The women nurses in the naval service will be limited to hospitals and hospital ships, so that the much more extensive work of the hospital corps will be but slightly curtailed.

This report, like its predecessors, contains much evidence of work well done and shows the determination of the surgeon-general to increase both the popularity and efficiency of the service by every means in his power.

MEDICAL NOTES.

THE STUDY OF OLD AGE. — It is announced that the share of the Nobel prize which goes to Professor Metchnikoff is to be devoted to a continuation of his studies on old age.

SLEEPING SICKNESS BUREAU. — Under this heading a bulletin is being issued by the Honorary Managing Committee of the Sleeping Sickness Bureau with headquarters in London. This first number is a highly technical discussion of the chemo-therapy of trypanosomiasis, and contains a most valuable bibliography of 197 references.

ARMY MEDICAL RESERVE. — Through the invitation of the Surgeon-General of the United States Army, Brig.-Gen. Robert M. O'Reilly, many physicians throughout the country have joined the new medical reserve corps of the army with commissions as first lieutenants. During peace these receive no salary, but in time of war it is proposed to bestow upon them the highest rank possible in the volunteer service. The following Boston men have received commissions: Drs. F. C. Shattuck, R. H. Fitz, Myles Standish, W. H. Conant, R. C. Cabot and David Cheever.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, Dec. 1, 1908, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 76, scarlatina 74, typhoid fever 13, measles 28, smallpox 0, tuberculosis 50.

The death-rate of the reported deaths for the week ending Dec. 1, 1908, was 17.02.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, Nov. 28, 1908, was 199, against 201 the corresponding week of last year, showing a decrease of 2 deaths and making the death-rate for the week 16.77. Of this number 108 were males and 91 were females; 193 were white and 6 colored; 135 were born in the United States, 60 in foreign countries and 4 unknown; 43 were of American parentage, 134 of foreign parentage and 22 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 78 cases and 6 deaths; scarlatina, 75 cases and 4 deaths; typhoid fever, 12 cases and 3 deaths; measles, 16 cases and 0 deaths; tuberculosis, 38 cases and 12 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 31; whooping cough 3, heart disease 16, bronchitis 6 and marasmus 4. There were 16 deaths from violent causes. The number of children who died under one year was 47; the number under five years 68. The number of persons who died over sixty years of age was 50. The deaths in public institutions were 65.

Cerebrospinal meningitis, 3 cases and 2 deaths.

Deducting deaths of non-residents, the total is 177. The corrected rate is then 14.92.

THE RHODE ISLAND HOSPITAL. — The Rhode Island Hospital Corporation recently held its annual meeting in Providence and re-elected its board of trustees. Edward D. Pearce, Esq., was elected treasurer in place of John W. Danielson resigned. The reports of the trustees and of the superintendent show that this has been a busy and successful year. The first patient was admitted to the Rhode Island Hospital forty years ago, and since that time 66,297 patients have been admitted and treated.

POPULAR LECTURES AT THE HARVARD MEDICAL SCHOOL. — The course of popular lectures for the year 1909 at the Harvard Medical School has been announced. The subjects, as heretofore, are varied, many of them somewhat technical in character and others more popular, so far as one may judge from the titles. We note with satisfaction that one biographical lecture is to be given by Dr. H. C. Ernst on Louis Pasteur. It would be well in this course to substitute lectures of this sort for those which are of so technical a sort that the public is likely to derive little benefit from them.

NEW YORK.

Medical Society, County New York. — At the one hundred and third annual meeting of the Medical Society of the County of New York, held on Nov. 23, the following officers were elected: President, Dr. H. Seymour Houghton; First Vice-President, Dr. John E. Weeks; Second Vice-President, Dr. Joseph Brettauer; Secretary, Dr. John Van Doren Young; Assistant Secretary, Dr. J. Milton Mabbott; Censors, Dr. Charles G. Kerley, Henry M. Painter and J. Riddle Goffe.

Awards of Paris General Hygienic Congress. — Announcement is made by the *Paris Journal* that the commission on awards of the General Hygienic Congress, which was held in Paris under the auspices of the Minister of Labor, recognized the philanthropic work of Nathan Strauss, of New York, by awarding him a gold medal and diploma for his invention of a home pasteurizer of extreme simplicity. On the occasion of the conferring of the honor, which was done in the presence of the mayor and other officials, M. Hurel, delegated by the Minister of Labor, made an address reviewing Mr. Strauss's work. In the course of it he stated that a genuine and far-reaching service to humanity had been rendered by him, and that not content with distributing such benefits in America, he had established pasteurizing depots in England, Germany and Belgium.

"White Plague Sunday." — In response to a request made by the committee on the prevention of tuberculosis of the Brooklyn Bureau of Charities, many ministers in that borough on Sunday devoted their sermons wholly or in part to the subject of tuberculosis, and, besides the clergymen, speakers especially qualified, who were sent by the committee, made addresses in some of the churches. In some of the Jewish synagogues, also, the matter was brought before the congregations. The day was called "White Plague Sunday" in the churches, and collections in aid of the work being carried on by the Bureau of Charities were taken up. A circular letter was send to the clergy by the committee, stating the urgency of the agitation in view of the thousands of cases in the borough among a class of people too ignorant or unable to prevent the infection spreading among their families. There was immediate need, it said, of the establishment of more dispensaries, of having regular tuberculosis nurses, and of carrying on a general educational campaign.

There will be No Children? — In the course of a lecture on "Births and Birth," delivered at Ithaca on Nov. 24, in the course on hygiene and sanitary science now being given under the joint auspices of Cornell University and the State Department of Health, Prof. Walter F. Wilcox made the following rather startling statement: "During the period from 1860 to 1900 the proportion of children to 1,000 women of childbearing age has decreased in the United States by 152, or an average of about 30 in each decade. If we assume that the change will continue unchecked for a century and a half, there will be no children left." The true reason for the fall in the birth-rate, he said, was that in modern times, mainly within the last fifty years, births have come under the control of human will and choice in a sense and to a degree never before the case. Professor Wilcox also gave statistics showing that marriage is less common among college graduates of both sexes than it is in the average of the general population, and that the birth-rate among them is small.

An Athletic Member of the Board of Education. — Mayor McClellan has appointed James E. Sullivan, President of the Amateur Athletic Union, a member of the Board of Education, and it is felt that his presence in that body will be of material service in the promotion of the physical welfare of the public school children. Educated himself in the public schools of New York, Mr. Sullivan has for many years been interested in this work. In association with Dr. Luther H. Gulick, director of physical exercise in the schools, he organized the Public Schools Athletic League of New York, and his ideas and suggestions have been the basis of the formation of similar leagues in many cities, not only in the United States, but in Europe. He was a pioneer in playground work and was one of the organizers of the Outdoor Recreation League of New York, of which he has been president for the past fifteen years. As President of the Amateur Athletic Union, to which position he has recently been elected for the third time, he has been largely instrumental in bringing about the present healthy condition of amateur field and track athletics. He was director general of the Olympic Games at St. Louis in 1904, and was appointed United States commissioner to these games at Athens in 1906 and at London the present year.

Red Cross Society. — The annual meeting of the New York State Branch of the American National Red Cross Society was held at the Waldorf-Astoria on Nov. 24. It was largely devoted to the formulation of plans for the suppression of tuberculosis, particularly in the direction of establishing "day camps" for consumptives. In order to raise funds for the prosecution of the campaign against tuberculosis the general use of the Red Cross Christmas stamp was recommended. These stamps bear the inscriptions "Merry Christmas" and "Happy New Year" and cost one cent each, and the goverment has given permission for their employment in addition to regular postage stamps on letters. It was stated that the Delaware branch of the Red Cross was the first to take up the idea of the Christmas stamp, originated by the Danish government in 1904, and that last year, although it has a membership of only 200, it effected the sale of 400,000 stamps. It is hoped that the New York branch, with its 15,000 members, will be able to sell at least a million this year. At the meeting it was announced that Mrs. Russell Sage, who had previously contributed $25,000 to the Red Cross endowment fund, had now made an additional gift of $5,000 to secure the services of Edward B. Bicknell as National Director. Col. William Carey Sanger was again elected President and the Hon. Elihu Root, Vice-President of the New York branch.

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Current Literature.

New York Medical Journal.

Nov. 7, 1908.

1. Ziegler, S. L. *Reflex Neuroses arising from Ocular and Nasal Abnormalities.*
2. Wright, J. *The Mechanico-Biologic Standpoint in Medical Problems.*
3. Eager, J. M. *The Purposes and Objects of Morbidity Statistics and the Methods of Collecting Them.*
4. Van Derslice, J. W. *The School Child.*
5. Super, C. W. *Ancient Greek Medicine.*
6. Osterhaus, K. *Obstetrical Paralysis.*
7. Robbinovitz, S. *Cause of Premature Separation of the Placenta.*

The Journal of the American Medical Association.

Nov. 7, 1908.

1. Hertzler, A. E. *Technic of Abdominal Hysterectomy.*
2. Ebright, G. E. *Lumbar Puncture in Diagnosis and Therapeutics.*
3. Gallant, A. E. *The Corset for Movable Kidney and Associated Visceral Ptoses.*
4. Rosenow, E. C. *Phagocytic Immunity and the Therapeutic Injection of Dead Bacteria in Endocarditis.*
5. **Preliminary Report of the Anesthesia Commission of the American Medical Association.*
7. Cunningham, O. J., and Anderson, H. C. *Methods of Administering Ether.*
8. Haggard, W. D. *Nitrous Oxide Anesthesia.*
9. Haggard, W. D. *Chloroform Anesthesia.*
10. Mitchell, J. P. *Local Anesthesia.*
11. Allen, F. *Special Methods of Anesthesia.*
12. Hamburger, W. W., and Ewing, F. E. *The Blood Changes Incident to Surgical Anesthesia, with Special Reference to Those Induced by Nitrous Oxide.*
13. Wood, H. C., Jr. *The Effects of Quebrachin on the Lungs.*
14. Bishop, L. F. *Ear Symptoms of Cardiovascular Disease.*

5. The anesthesia commission of the American Medical Association includes in its report papers Nos. 6 to 12 inclusive. The commission submits the three following recommendations regarding general anesthetics. 1. That for the general practitioner, and for all anesthetists not specially skilled, ether must be the anesthetic of choice,— ether administered by the open or the drop method. 2. That the use of chloroform, particularly for the operations of minor surgery, be discouraged, unless it be given by an expert. 3. That the training of skilled anesthetists be encouraged, and that undergraduate students be more generally instructed in the use of anesthetics. The commission also expresses its belief that the further use of nitrous oxide combined with air or oxygen in major surgical operations is promising. [R. I. L.]

The Archives of Internal Medicine.

November, 1908.

1. *Rogers, J., and Beebe, S. P. *The Treatment of Thyroidism by a Specific Cytotoxic Serum.*
2. *Ewing, J. *Acidosis and Associated Conditions.*
3. *Hall, F. J. *Hypernephroma.*
4. *Hoover, C. F., and Stone, C. W. *Paroxysmal Hemoglobinuria. Account of Two Cases.*

1. Rogers and Beebe discuss at length their experiences with the use of serum in the treatment of exophthalmic goiter. They point out the reasons for the use of a serum as prepared by them, and discuss at length the different forms of the disease and the question of the secretion of the gland in these diseased conditions. They describe the types of the disease which are favorable to treatment and the indications for the combined treatment with thyroid extract. Their conclusions are (1) that the serum has a specific effect in neutralizing the toxic action of the thyroid secretion and as a therapeutic agent gives results which cannot in many cases be attained by any other medical means; (2) that not all cases presenting symptoms of thyroidism can be treated successfully with serum, because not all cases are purely hypertrophic in origin; (3) that the rapid amelioration of symptoms in the acute toxic cases, similar in most respects to the well-accepted instances of neutralization of toxin by antitoxin, is a weighty argument in favor of believing the symptoms to be due to the toxic effects of hyperthyroidism. The beneficial results of combined treatment, especially in the older cases, indicate a dysthyroidism, as well as hyperthyroidism, as a factor in the production of symptoms.

2. Ewing gives a general discussion of the work and theories that have been put forward to explain the coma of diabetes, and acidosis. He gives many references.

3. Hall reports a series of seventeen cases of hypernephroma.

4. Hoover and Stone report two cases of paroxysmal hemoglobinuria. In each case they were enabled to bring on the attacks by exposure to cold, and in each case the condition of the blood, as to its cells, was determined before

during and after the attack. They then experimented on the serum from the standpoint of the side-chain theory, and they believe that they are justified in saying that the hemoglobinuria which follows exposure to cold is due to some biologic product in the plasma which in its behavior admits of the demonstration of every step in hemolysis as expounded by the side-chain theory of Ehrlich.

[W. B. R.]

Journal of Medical Research.
November, 1908.

1. *Hiss, P. H., Jr. *The Curative Influence of Extracts of Leucocytes upon Infections in Animals.*
2. *Hiss, P. H., Jr., and Zinsser, H. *On the Precipitation of Bacterial Extracts by Extracts of Leucocytes.*
3. *Zinsser, H., and Hiss, P. H., Jr. *Observations on the Mechanism of Protection by Leucocyte Extracts.*
4. *Hiss, P. H., Jr., and Zinsser, H. *A Report of Twenty-four Cases of Epidemic Meningitis treated with Leucocyte Extract.*
5. *Hiss, P. H., Jr., and Zinsser, H. *On the Treatment of Pneumonia with Leucocyte Extracts.*

1, 2, 3, 4, 5. Hiss and Zinsser report a series of very interesting experiments on the curative influence of extracts of leucocytes. The leucocyte extracts were obtained by thoroughly emulsifying the cells in distilled water, and allowing them to stand for a few hours at 37.5° C., and then at ice-box temperature until used. In most cases not only the clear supernatant fluid has been injected into animals, but also the cell residue which may be easily emulsified by shaking. Rabbit and dog leucocytes were used, obtained by pleural inoculations with aleuronat.

They report a number of experiments on the effect of these leucocyte extracts on animals infected with various diseases, and conclude that extracts of leucocytes from normal rabbits have a distinct modifying and curative action when given subcutaneously or intraperitoneally to rabbits, even in systemic infections which are rapidly fatal in untreated rabbits. The rabbit leucocytes are also active in guinea pigs, saving them from fatal infections. Extracts of leucocytes from immunized animals seem, in some instances at least, to possess even greater curative powers than extracts from leucocytes of normal animals. The authors believe that the action of the leucocyte extract may be due to the enhancement of the bacteriolytic action of the animals' plasma by the introduction of complement or to the action of digestive substances usually not liberated from the leucocytes, but is most likely due to poison, neutralizing or destroying bodies, which act on the endotoxins, i. e., endo-antitoxins or anti-endotoxins, and these relieve the leucocytes of the animal from fatal poisoning and protect the higher cells of the animal so that their functions are not deranged.

If these protective bodies are poison neutralizing in their action, it does not seem improper to refer to them as endo-antitoxins, since they are apparently antibodies, which are not normally given up to the plasma by the cells possessing them, and in this peculiarity correspond to the bodies against which, it seems, they are chiefly directed and which, being fixed constituents of the bacterial cell, are, therefore, referred to as endotoxins. It would seem, then, more logical to refer to these more diffusible bodies of the animal cell as endo-antitoxins than as anti-endotoxins.

It does not seem unlikely, therefore, that extracts of leucocytes (polymorphonuclear and mononuclear) and possibly of the blood-forming organs furnish us with means of combating infections incited by those micro-organisms generally looked upon as giving rise to endotoxin poisonings and which have steadily refused to yield to the action of immune sera alone.

The authors then report a series of tests made in vitro and in the peritoneal cavity to determine the mechanism of this protection afforded by the leucocyte extracts, which seem to show that in the absence of bactericidal, bacteriolytic or phagocytic stimulating effects referable to the leucocyte extracts, the favorable influence which these substances were repeatedly shown to exert upon the temperature and general condition of the animals and upon the ultimate outcome of the infections is probably dependent upon a faculty of neutralization possessed by the leucocyte extracts toward certain toxic bacterial products.

The results of the use of the leucocyte extracts in cerebrospinal meningitis and in pneumonia, as reported in the last two papers, are certainly remarkably suggestive

[W. B. R.]

Annals of Surgery.
November, 1908.

1. *Lee, W. E. *The Use of Ethyl Chloride as a General Anesthetic in the Pennsylvania Hospital.*
2. Price, J. W., Jr. *Ludwig's Angina.*
3. *Jopson, J. H., Speese, J., and White, C. Y. *Tumors of the Breast in Childhood.*
4. *Bartlett, W. *Biliary Calculus weighing Two and One-Half Ounces Removed from the Common Duct.*
5. Wilson, C. *Acute Dilatation of the Stomach Complicating Typhoid Fever.*
6. *Cobb, F. *Acute Hematogenous Infection of One Kidney in Persons Apparently Well.*
7. *Eisendrath, D. N., and Herzog, M. *Contribution to Renal and Ureteral Surgery.*
8. *Scudder, C. L. *Arthroplasty for Complete Ankylosis of the Elbow.*
9. Tenney, B. *Some Surgical Conditions in the Knee-Joint.*
10. *Flint, C. P. *The Operative Treatment of Fracture of the Neck of the Femur in Adults.*
11. *Ashhurst, A. P. C., and Newell, W. A. *The Conservative Treatment of Fractures of the Femur.*
12. Sheldon, J. G. *Non-Tuberculous Osteomyelitis of the Os Calcis.*
13. MacClure, T. R. *Silverized Catgut. The Argyrol Method.*
14. Pilcher, J. T., and Joery, W. *Surgical Progress. Excerpts from Transactions of the German Congress of Surgery, April 21–24, 1908.*

1. Lee records a series of 5,575 cases in which ethyl chloride was used as a general anesthetic, either alone or in combination with other agents. In this series there were five fatalities, all among the 947 cases in which ethyl chloride was used alone, a mortality of about ½%, notwithstanding which the author recommends its employment for painful dressings and minor surgical procedures. Its advantages are rapidity of action, ease of administration, freedom from respiratory irritation and smallness of dosage (10 gm. for three minutes). Its disadvantages are persistence of muscular rigidity and liability to cause death, which occurs primarily from respiratory, secondarily from cardiac, failure.

3. Tumors of the breast in childhood are rare and usually benign. Many of them are vascular and congenital. The writers collect from the literature and classify 28 cases of all types, to which they add two of their own observation. Of these 30 cases, 15 were fibro-epithelial tumors, 6 were angiomata, 6 sarcomata, 3 carcinomata. Operation is usually indicated and its results generally good.

4. Bartlett records the successful removal from the common bile-duct of a calculus measuring 4 by 1½ inches and weighing 2½ ounces, which he believes to be the largest ever reported.

6. In continuation of his article on the same subject in the Boston Medical and Surgical Journal of Jan. 24, 1907 (Vol. clvi, p. 97), Cobb reports 8 additional cases of unilateral hematogenous renal infection in persons apparently previously well. He discusses the etiology of the condition and analyzes its history and symptoms at length, emphasizing the importance of its early clinical diagnosis and operation. Nephrectomy is generally indicated, though in cases where the area of infection is limited and the general condition good nephrotomy and drainage may be preferable. There are excellent plates illustrating the gross and the microscopic pathology.

7. The authors report, with admirable illustrations, three interesting and unusual renal cases: (*a*) A patient in whom at autopsy after six days' illness without operation the right ureter was found completely obstructed by two impacted calculi, one in the proximal portion, one at the vesical extremity. There was congenital hypoplasia of the left kidney and suppurative pyelonephritis of the hypertrophied right kidney. (*b*) An intranephritic lipoma due to fatty hypertrophy from chronic suppuration

following calculous pyelitis. (c) A case of shattering rupture of the kidney with subsequent infection and destruction of most of the injured organ, but persistence of a small portion which continued its excretory function.

8. Scudder reports a case of arthroplasty for complete ankylosis of the left elbow following T-fracture of the lower extremity of the humerus with upward and forward displacement of the internal condyle. At operation a new bony joint was fashioned, with complete preservation of the radial head, and lined with a fat flap from the fascia over the triceps. A year and a half later the patient has a slightly loose but strong and serviceable joint; he is able to play golf; photographs demonstrate his power of complete voluntary flexion and of voluntary extension to within about 30° of the normal. There are x-rays before and after operation. Scudder believes this procedure preferable to excision in adult cases of ankylosis following trauma or infection in which motion with power is desired. It is less applicable to the knee and hip than to the elbow.

10. Flint advocates operative intervention in fractures of the neck of the femur in adult cases where conservative treatment has resulted in non-union or seems likely to do so. He believes excision of the head generally preferable to pegging, and when the latter is performed employs a peg of bone rather than of metal.

11. Ashhurst and Newell report and analyze a series of 61 cases of femoral fracture supporting their contention that conservative gives better results than operative treatment of such injuries. [R. M. G.]

THE LANCET.

Nov. 7, 1908.

1. *PASTEUR, W. *The Bradshaw Lecture on Massive Collapse of the Lung.*
2. *WHITING, A. T. *Angioneurotic Edema as a Familial Cause of Sudden Death.*
3. TILLEY, H. *Direct Examination of the Larynx, Trachea and Esophagus by Bruning's Instrument.*
4. PHILLIPS, L. P., AND SMITH, S. E. *On a Remarkable Case of Venous Accommodation after Compression of the Superior Longitudinal Sinus by a Glioma.*
5. PEARSE, F. *"Sutika," the Puerperal Diarrhea of Bengal.*
6. *DRAGE, H. L., AND MORGAN, G. T. *The Palliative Treatment of Inoperable Cancer.*
7. MARSH, H. *The Royal College of Surgeons of England.*

1. Pasteur presents an interesting paper on massive collapse of the lung with numerous illustrative cases. This condition occurs most frequently in diphtheria with paralysis of the diaphragm or some other of the respiratory muscles. The clinical signs are not very definite, as it is difficult to decide whether the signs present are due to compression, consolidation or collapse. There is apt to be loss of percussion resonance, weak bronchial breathing with or without râles. It may be either on the base of the lung from paralysis of the diaphragm or it may involve the upper lobes from paralysis of the intercostals. It is only by considering the case in all its aspects that a diagnosis can be made, signs of paralysis of the diaphragm, such as exaggerated movements of the lower ribs, being especially important. The symptoms come on very rapidly and disappear equally so, a characteristic sign. He believes that many of the lung complications following severe abdominal operations are due to paralysis of the diaphragm and not to pneumonia, as is generally thought to be the case. He describes several instances in which at the post-mortem this was found to be the case.

2. Whiting discusses the various forms of angioneuroses and believes that angioneurotic edema is the only one dangerous to life. He presents these cases in detail, but of 205 cases studied no less than 110 were in family groups. Osler describes a family of thirty-six in whom twenty-two had this disease. The writer gives details of cases where this condition had led to sudden death, and discusses briefly its pathology, etiology and treatment.

6. Drage and Morgan discuss the use of sodium cinnamate and allied preparations in cases of inoperable cancer. Some of his cases have been markedly benefited by this treatment. With the drug he also uses some metal preparation, such as pulvis antimonialis or oleate of copper. He does not believe in trypsin or Coley's fluid, as based on an insecure scientific foundation. [J. B. H.]

BRITISH MEDICAL JOURNAL.

Nov. 7, 1908.

1. MORRIS, H. *The Mitchell Banks Memorial Lecture.*
2. *BROOK, W. F. *The Value of Chromocystoscopy in the Diagnosis of Renal Disease.*
3. CARWARDINE, T., AND BLETCHLY, G. P. *Cystic Disease of Kidneys with Pyuria and Hemorrhages.*
4. CORNER, E. M., AND GRANT, L. *A Case of Torsion of the Great Omentum and Habitual Partial Reduction en Masse.*
5. *BENTALL, W. C. *Cancer in Travancore, South India. A Summary of 1,700 Cases.*
6. FORSYTH, N. C. *A Case of Post-Anesthetic Acetonuria with Delayed Excretion of Acetone, after Child Labor.*

2. Brook describes the technic of chromocystoscopy and gives several illustrative cases. He believes that this method is of very great value and should be used far more than it now is.

5. Bentall describes the frequent occurrence of cancer among the natives of South India and, owing to the large number of cases of cancer of the mouth, connects this fact with the inveterate habit among the natives of chewing lime, tobacco and betel leaves. He concludes that the younger age incidence of cancer in Travancore is suggestive of some definite cause early in life; that the frequency of cancer of the buccal cavity and its absence in the rest of the alimentary canal is suggestive of a local cause for the former, but absence of digestive causes in the latter, and that the inveterate habit of "betel chewing" from childhood is suggestive of the cause, either by mechanical irritation or as a medium suitable for the growth of a possible cancer germ. [J. B. H.]

EDINBURGH MEDICAL JOURNAL.

OCTOBER, 1908.

1. *GRIEG, D. *On Osseous New Growths at the Elbow following Backward Dislocation of the Radius and Ulna.*
2. *KER, C. B. *The Treatment of Cerebrospinal Meningitis with Flexner's Serum.*
3. WEBER, F. P. *A Theoretical Objection to the Employment of the Calmette Ophthalmo-Reaction for Tuberculosis.*

1. Grieg describes a little-known condition following backward dislocation of the radius and ulna without fracture in which an unexpected new growth of bone follows and interferes greatly with the usefulness of the joint. He gives three cases in detail, with x-ray photographs, and reviews the literature of this subject. The etiology of this condition he does not try to explain.

2. Kerr believes that the subcutaneous use of antimeningitis serum is of little or no value but that intraspinally Flexner's serum is of the greatest efficiency. He gives his results in tabular form. [J. B. H.]

THE PRACTITIONER.

OCTOBER, 1908.

1. *BARKER, A. E. *On the Pre-Operative Treatment of Non-Malignant and Gastric Disease.*
2. *CORNER, E. M. *Fracture and Refracture of the Patella with Some Points in the Treatment.*
3. *MACKENZIE, T. A. *Fracture of the Metacarpal Bones.*
4. GRAY, H. T. *A Note on the Necessity for End-to-End Apposition in Fractures of Long Bones.*
5. STEPHENS, G. A. *Color Vision and its Relation to the Other Senses.*
6. LANE, T. E. *Review on Venereal Diseases.*
7. HARRIS, W. *A Review of Recent Neurological Literature.*
8. WAKEFIELD, A. W. *An Account of the Theory and Employment of Bier's Method of Treatment by Passive Congestion.*
9. MACKAY, D. M. *The General Practitioner and Deaf Mutism.*

1. Barker calls attention to the urgent need of preparing a patient who has cancer of the stomach for operation by gastric lavage, carried out every night, so as to render him in the best possible state for a severe operation. This he believes is something very much neglected. He cites cases where the improvement of the patient was so great, after careful and persistent treatment of this kind,

that the diagnosis of gastric cancer was no longer tenable and no operation was needed.

2. In an excellent article, profusely illustrated, Corner concludes from a study of the results of suturing fractures of the patella that internal splints, wires, etc., lead to absorption of the hard substances of the bone round them, with a consequent loosening of the splint and to its easy breaking with a sudden effort. With the early use of massage and movements the union is fibrous, not bony, but that this fibrous union is just as good as any bony union and far less apt to lead to adhesions to the femur when massage and movements are used on the second day or shortly afterwards. The nature of the internal splint is a matter of indifference. For success the area must not suppurate.

3. Mackenzie presents a careful article on fracture of the metacarpal bones, illustrated with many excellent skiagraphs and x-ray plates. He considers the cause and the diagnosis of this condition and takes up in some detail, under treatment, the various forms of splints and dressings. He gives many illustrative cases. [J. B. H.]

Deutsche Medizinische Wochenschrift. No. 43.
Oct. 22, 1908.

1. Henkel, M. *Prognosis and Treatment of Puerperal Infection.*
2. *Blumenthal, F. *Recent Investigations on Diabetes.*
3. Strubell, A. *Diagnosis and Treatment of Functional Cardiac Disease.* (Conclusion.)
4. Harrass, P. *The Indications for Chondrotomy in Apical Pulmonary Tuberculosis in the Light of the Results of Recent Investigation.*
5. Leber, A. *Trypanosome Toxins and Trypanotoxic Parenchymatous Keratitis.*
6. Portner, E. *Cystoscopy and Ureteral Catheterization in Children.*
7. Rumpel. *Bladder Tumors in Children.*
8. Leven, L. *Case of Accidental Vaccination of the Vulva.*
9. Kantorowicz, E. *The Sliding-Weight Hammer. A New Percussion Hammer.*

2. This author takes up the question of what parts of the body are involved in diabetes. The three main ones are the central nervous system, the liver and the pancreas. Irritation to certain parts of the central nervous system causes glycosuria, but not diabetes, because if all the glycogen is removed from the liver, the glycosuria ceases. Also certain chemical agents cause glycosuria; whether by influencing the medulla or not is undecided. As regards the liver, great destruction of liver substance can occur without glycosuria; and without apparent anatomic injury, some functional disturbance will cause glycosuria.

Another theory in regard to diabetes is that the muscles cannot burn up the sugar sent to them nor take it up as glycogen. This theory is not proven. On the theory that the muscles can deal better with sugar that did not go to the liver, it was found in diabetics that they did better on rectal-fed sugar.

In regard to the pancreas, it has been shown that its entire removal will cause glycosuria. There has been a considerable amount of experimental work on the pancreas and duodenum and nerves of both and extracts of the pancreas, with the general conclusion that the pancreas is a considerable factor in the question of diabetes, but not the whole factor.

Also this author emphasizes the fact that in diabetics sugar may be obtained from carbohydrates, albumen and probably fat. Also that acetone comes from albumen as well as fat, but that at the same time with the acetone formed from the ketone group of amido-acids of the albumen bodies, carbohydrates are formed from the aldehyde group of these acids and there help burn up the acetone bodies. Thus albumen does not appear to be an acetone producer because the acetone is taken care of by the carbohydrates.

In conclusion, he considers that, as the etiologic factors in diabetes, the central nervous system must be considered for its regulating effect on metabolism, the liver as a storehouse for glycogen. The pancreas he considers the most important etiologic factor, but believes that its method of action is unknown. The muscles he also regards as factors of secondary importance. [C. F., Jr.]

Münchener Medizinische Wochenschrift. No. 41.
Oct. 13, 1908.

1. *Erb, W. *Syringomyelia and Dystrophy.*
2. *v. Tabora, D. *Alternating Pulse and Its Relations to Continued Bigeminal Pulse. II.*
3. Rubin, J. *Pneumococcus Meningitis as a Mediate Late Result of a Cranial Injury.*
4. Fischer, B. *Indirect Fracture of the Orbital Roof and the Effect of a Bone-splinter in the Brain.*
5. Kretschmann. *The Operative Treatment of Deformities of the Nasal Septum.*
6. Walzberg, T. *Tenotomy of the Ileopsoas Muscle at the Trochanter Minor.*
7. Trautmann, A. *Endemic Malaria in Leipzig.*
8. Apelt, F. *A Case of Basedow's Disease following Acute Non-suppurative Thyroiditis.*
9. Burk, W. *A Case of Acute Recurring Thyroiditis.*
10. *Schwerin, H. *Two Cases of Acute Non-suppurative Thyroiditis.*
11. Ahrens. *A Case of Resection of the Hip-Joint, with Interposition of a Muscle Flap.*
12. *Rahner, R. *A Contribution on Laryngitis Stridula.*
13. Bizzozero, E. *A Method for the Demonstration of Pigments and Their Colorless Antecedents, with Especial Consideration of the Eye and Skin Pigment.*
14. May. *The Effect of Römer's Pneumococcus Serum in Croupous Pneumonia, with Especial Consideration of the Leucocytes.*
15. Sudhoff. *Albrecht Haller.*
16. Doll. *The Clinical Story of Appendicitis.*

1. Erb presents report and discussion of a case in which the diagnosis made was syringomyelia of the lower cord.

2. v. Tabora records two cases and shows tracings to prove that the bigeminal pulse can pass over into the alternating pulse. He agrees with Herring's explanation of the bigeminal pulse, namely, that part of the ventricle fails periodically to contract.

10. The author describes two cases of acute diffuse swelling of the thyroid gland. They recovered in eight to fourteen days under symptomatic treatment. He surmises that it is not a very rare condition.

12. Rahner believes as a result of observation that the anatomical basis of laryngitis stridula is a marked swelling, coming on at night, of the subglottic mucous membrane. [G. C. S.]

Berliner Klinische Wochenschrift. No. 41.
Oct. 12, 1908.

1. Hoffmann, E., and Löhe, H. *Universal Disseminated Cutaneous Syphilide in Lower Apes after Inoculation into the Testis.*
2. Casper, L., and Engel, C. S. *An Attempt to Influence Chronic Renal Inflammation by Sero-therapeusis.*
3. Reicher, K. *Etiology and Therapeutic Experiments in Pernicious Anemia.*
4. Panichi, L. *The Fränkel Pneumococcus in the Blood in Pulmonary Tuberculosis.*
5. Frugoni, C., and Marchetti, G. *Contribution to the Study of Diabetic Lipoidemia.* (Preliminary communication.)
6. Patella, V. *Kurloff Bodies in Mononuclears of the Guinea-pig's Blood and their Protozoan Nature.*
7. Doerr, R. *A New Invisible Virus.* (Preliminary communication.)
8. Kohn, H. *The Question of the Specialist.*
9. Hildebrandt, A *Tendon Transplantation.*

Correspondence.

THE INTERNATIONAL ASSOCIATION OF UROLOGY.

Nov. 30, 1908.

Mr. Editor: The first Congress of the International Association of Urology having recently taken place in Paris and having proved to be very interesting and successful to those who attended it, the writer of this communication thought that the profession in this country might like to know something of the manner in which the Association came into existence, of its character, aims and of the men who compose its membership, and submits this short sketch for publication, if found acceptable, in the Journal.

The International Association of Urology owes its existence to the initiative of a number of the members of l'Association Francaise d'Urology, which has been the most productive of all national associations in this field of the profession during the last twelve years or so, and the contributions of the members of which have been of a very high order of excellence. These gentlemen sent out invitations to certain representative men of the different nations, asking them individually to select a small number of their countrymen respectively to act as provisional committees and to choose in each instance one of their number as a national delegate, asking that these delegates meet in Paris in the month of October, 1907, for the purpose of conferring and organizing an International Association of Urology.

The invitations were accepted in every instance, and in the following year the delegates met in Paris and the proposed association was quickly and harmoniously organized. The following are some of the more important of the features and rules of the Association that were adopted at that meeting.

Two boards of officers were elected, the first being that to which the administration, control and direction of the affairs of the Association were intrusted, the second having charge of the management of the first Congress, which was to take place on Sept. 30, Oct. 1, 2 and 3, 1908, at Paris.

These two boards were composed as follows:

The first or permanent board consisted of Guyon, of Paris, President; Vice-Presidents, Israel, of Berlin, and Reginald Harrison, of London; Secretary, Dr. E. Desnos, of Paris, and Treasurer, Dr. Pasteau, of Paris.

The committee of the first Congress was composed as follows:

Albarran, of Paris, President; Vice-Presidents, Posner, of Berlin, and Watson, of Boston; Secretary and Treasurer, the same as for the other board.

The following are among the rules that were adopted by the delegates in organizing the Association:

1. The meetings of the Association are to be triennial.

2. The board of officers who are to manage the next ensuing Congress is elected at the preceding one. The officers of the permanent board are elected every three years, and remain in office for three years. Its members are eligible for re-election.

3. The number of members of each national contingent is limited. The largest number was accorded to Germany, (50) the next to France and to the United States, (40) each, and a smaller number to each of the other nations represented.

4. Only communications upon the subjects which have been chosen at the time of the preceding Congress can be presented at the ensuing one.

5. These subjects are presented in the form of résumés of reports which have been written by those members who have been chosen as reporters for each special subject.

Any members desiring to do so may discuss these reports or the subjects of them after the reports have been presented. The time allowed to each speaker for these discussions is ten minutes.

6. In order to become a member of the International Association it is necessary to have the candidate accepted by his own national committee, and if the permanent International board accepts him he becomes a member.

7. Each national committee consists of three members, one of whom is delegate to the International body, and, *ipso facto*, a member of the permanent board. One is secretary and one chairman.

The American national committee of three consists of Drs. Watson, of Boston, chairman; Vander Poel, of New York, secretary and national delegate, and Young, of Baltimore.

At the first Congress the officers of the committee for the next Congress were elected as follows: Hurry Fenwick, of London, President; Vice-President, Koranyi, of Budapest; Secretary, Pardoe, of London; Treasurer, Pasteau, of Paris. The only change made in the permanent board was the electing of Watson, of Boston, to the position of vice-president in the place of Reginald Harrison, deceased.

The character of the Association may be judged by the following list of names of some of its members: Germany was represented by Israel, Barth, Kummel, Kuster, Posner, Casper, Wossidlo, Frank, Garre, Rehn, Sonnenburg, Richter; Austria by Frisch, Zuckerkandl, Eiselsberg, Frankl-Hochwart, Kapsammer, Rydygier, Nichlich; Belgium by Verhoogen, Kaersmaecker and d'Hoenens; France by Guyon, Albarran, Desnos, Pousson, Achard, Nogues, Tiessier, Imber, Bazy, Escat, Rafin, Proust, Legueu, Motz, Halle, Hartmann and Brault; England by Hurry Fenwick, Pardoe, Newman, Bickersteth; Hungary by Harberen, Koranyi, Illyes; Roumania by Jonnesco, Horresco; Russia by Federoff; Switzerland by Roux and Reverdin; Italy by Ceccherelli, Ceci, Pavone, Giordano; Denmark by Saxtorph and Rovsing; Finland by Faltin and others; Spain by Bartrina and others; the United States by Alexander, Keyes, Jr.; Brewer, Joseph Blake, Welsh, Arthur and Hugh Cabot, Tilden Brown, Young, Vander Poel, Watson and others. The above names will suffice to show the high character of the membership of the Association.

The following were among the more striking personalities of those who attended the Congress: Guyon, Israel, Albarran, Hurry Fenwick, Achard, Pousson and Rovsing.

One of the most noticeable features of the Congress was the fact of the singleness of aim and purpose of the members. One felt that every one of those who spoke in the seances was possessed by one and only one object, namely, to contribute as far as he was capable of doing to the advancement of the knowledge of the subjects that were under discussion. There was a refreshing absence of the recounting of long lists of successful operations, and each speaker gave the impression of being possessed of scientific zeal, not of the desire for personal advertising of his own wares. The commercial spirit was not in evidence at any time and had any one displayed it, he would assuredly have lost caste in that assembly.

In the view of the writer the French contingent led all others in point of the personal distinction of its members; they were, moreover, conspicuous for their sincerity and what one might term the scientific integrity of their contributions. While there is but one opinion as to the mental acumen, logical power of thought and telling force of their speech and way of presenting subjects, we who belong to either the Teuton or Anglo-Saxon families are sometimes inclined perhaps to credit the members of the Gallic race with allowing themselves to be seduced by the temptations presented by their brilliant mental qualities and the graphic character of their language into leaning rather too much toward the use of epigram, and epigram is, as we all know, apt to express a partial rather than a whole truth.

It is quite possible that the other races mentioned, which have less keen imaginations and a less agile quality of mind, may be the ones who are at fault in gauging the character of the work put forward by the French, just as the Englishman is probably quite wrong in assuming that the Frenchman who walks up and down the beach of a watering place, for instance, violently gesticulating while conversing with a friend who may very likely apparently also be in a frenzied state of nervous exaltation, is possessed by some extreme and overpowering passion, while, in fact, he is merely remarking to his friend how pleasant the weather is and how beautiful the sky and sea are on that special morning.

In any event, the particular group of Frenchmen who attended this Congress as members of the International Association of Urology were conspicuous for the honesty, directness and true scientific attitude and expression, and in these, as in many other respects, were, as has been said, at the head of the whole number of those who were gathered in the meetings of the Congress.

The subjects which were selected for discussion at the four sessions of the Congress and the members chosen to present them were as follows: First day: "Anuria and Its Treatment," Kummel, Watson, Achard. Second day: "Vesical Retentions not due to Obstructive Conditions," Frankl-Hochwart, Albarran, Nogues and d'Hoenens. Third day: "Physiology and Pathology of the Prostate," Posner, Pardoe and Harberen. Fourth day: "The

Operative Indications in Cases of Renal Tuberculosis," Ceccherelli, Brongersma and Horresco.

While no extraordinary innovations or advances were recorded in connection with the discussion of the subjects mentioned above, yet there was a high level of excellence maintained throughout and much to be learned from each other even by the best and most informed of the specialists of the world in this special field of surgery.

The most interesting of the discussions were those on Anuria and Renal Tuberculosis. The great frequency of the unilaterality of the latter disease in its early stages of invasion was reaffirmed by all of those who spoke and a gratifyingly long list of recoveries and cure of renal tuberculosis procured by early nephrectomy was recorded.

The value of decapsulation of the kidney, more especially in cases of acute parenchymatous nephritis of scarlet fever with anuria, was also emphasized.

The social events of the Congress were brilliant, charming, novel and marked by the perfection and artistic finish that characterizes these functions when they are in the hands of the French.

There were private dinners, formal public dinners, receptions by the President of the Congress, by the President of the Republic, by the Ministers of the Government and by the Officials of the Municipality of Paris, all of which were much enjoyed by the guests of the Congress.

In the course of these social gatherings the members of the Congress were entertained by actors and actresses from the Comedie Francaise, by singers and dancers from the Grand Opera.

The ladies accompanying the Congressists were admirably cared for by the committee of French ladies, of which Madame Desnosh, the wife of the indefatigable and courteous Secretary-General of the Congress, was the head, under whose guidance the parts of the program intrusted to this committee were carried out in a manner that left nothing to be desired.

In conclusion it should be said that the esteem and consideration shown toward the medical profession of this country through the attentions that were bestowed upon its representatives in the Congress were as gratifying as they were marked and unmistakable. Some of the evidences of this attitude that may be noted are these: The placing of the American flag on the right of the tricolor of France in all the decorations of the buildings in which the Congressists met. Gibson was elected an honorary President of the French Surgical Association just before he sailed for home, although it was known that he could not attend the meetings of that body. Alexander and Keyes made most favorable impressions during the seances of the Congress. An American was selected to make the address on behalf of the Congress to President Fallières on the occasion of the reception given by him to the Congressists at the Palais de l'Élysée, while the personal attentions accorded to the Americans were marked by much cordiality.

Very truly yours,

"Congressist."

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THE NEURASTHENIC AT BAY.

Boston, Nov. 30, 1908.

Mr. Editor: As the proverbial worm is at last driven to desperate valor, even so in these days, when every man is his own metaphysician, will the hunted neurasthenic turn upon his pursuers. The remark, "I feel sure that some form of mental healing would be good for Mrs. So-and-So," is becoming trite enough to be included in Gelett Burgess's list of "Bromidioms"; and the alacrity with which the poor victims of obscure and painful nervous maladies are rushed off to Emmanuel Church for treatment by their zealous, — well, their almost equally afflicted, — relatives, reminds one of Artemas Ward's cheerful willingness to have all his wife's relations go into the army.

The present writer, who looks at the situation from the viewpoint of Mrs. So-and-So, and not from that of her solicitous but not over-intelligent advisers, is moved to a few reflections.

First, it is hard to be told that your troubles, as real as tooth-ache, as prostrating as typhoid fever, have a "psychic" origin. Is that not equivalent to saying that your subconscious mind is a sort of Augean stable that only a kind of spiritual Hercules can clean up? It is an injurious insinuation. As the youth says in the "Love Sonnets of a Hoodlum," "Wouldn't it jar you; wouldn't it make you sore." Moreover, what does the word "psychic" mean to the ordinary, vulgar, lay mind?" "Well, I always thought she imagined there was something the matter with her. Why, if I should sit down and think about my pains and aches, I guess I could be sick enough," etc.

But suppose poor Mrs. So-and-So, driven to Emmanuel Church like the Frankish soldiers to baptism at the point of the sword, really does submit at last to psychotherapy. Well. And suppose her head aches as relentlessly as ever, her extreme exhaustion persists. What then? Has psychotherapy failed? Oh, not at all. It was all her fault, she opposed the suggestions and she may continue to enjoy poor health with a little less sympathy from the robust than she received before.

One more reflection upon the number of "trained psychologists" that have suddenly sprung up in our midst. How and where does one become a trained psychologist? Is there a correspondence school? Isn't it a little like the militiaman who returned from drill and announced to his admiring family that he had been made a corporal? "Mother," said one of the awestricken children, "Are we all corporals?" "Lord, no, child," she replied, "only your father and me."

Finally, I must remark, — diffidently, for I am not a trained psychologist, not yet, — upon an extraordinary divergence in view between Du Bois's "Psychic Treatment of Nervous Disorders," the book so often cited by the Emmanuel Church people, and "Religion and Medicine," the official book of the Emmanuel Movement. DuBois, rational, non-Christian, scientific, does not call upon the religious motive at all in treating his patients. He repudiates hypnotism, suggestion, etc., as savoring of miracle. He simply insists upon the importance, indeed, the supreme importance, of pointing out to the patient every sign of real improvement. And, by the way, he makes very sure that the improvement *is* real before he impresses the fact upon his patient. This is a wonderful thing. We all know that it is worth more than gallons of medicine. But isn't it an art that is practised, even if it isn't preached, by every doctor worthy of the name from the most learned specialist to the humblest country practitioner? X.

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ENTERTAINMENT AND INSTRUCTION FOR THE TUBERCULOUS.

Boston, Nov. 23, 1908.

Mr. Editor: The possibility of adding a new feature to the life of the attendants at the Day Camp for Tuberculous cases at Mattapan struck me with renewed force upon a recent visit there. The patients receive some physical nourishment, a little food upon arriving in the morning and before leaving in the afternoon, beside a good mid-day meal. There is the routine of recording pulse and temperatures, with occasionally other examinations. To break the monotony the patients chat among themselves, drink in the fresh air and enjoy the scenery slightly varied by the seasons. The nurses and attending doctors re-emphasize points of hygiene and add what encouragement they can to individual cases.

If a weekly talk to the whole group upon a subject of some educational nature could be given there would be mental stimulus and variety added. The camp would interest many visitors capable of discussing instructive topics and willing to make this a form of contribution. A physician would find among his acquaintances or with the aid of some league those who could give a talk. As the audience is always present the speaker for a given week could find an hour most convenient for him on any one of three or four days. A talk of ten minutes would furnish such a class, shut away from the activities of the world, considerable mental food and stimulate them as well physically. A little coaching by the physician in charge of this feature would assist the speaker in striking the right chords.

Very truly yours,

P. W. Goldsbury, M.D.

RECORD OF MORTALITY

For the Week ending Saturday, Nov. 21, 1908.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	—	—
Chicago	596	163	Waltham	6	1
Philadelphia	—	—	Pittsfield	7	1
St. Louis	—	—	Gloucester	—	—
Baltimore	188	42	Brookline	3	—
Cleveland	—	—	North Adams	3	—
Buffalo	—	—	Chicopee	6	3
Pittsburg	—	—	Northampton	7	3
Cincinnati	—	—	Medford	2	—
Milwaukee	—	—	Beverly	5	—
Washington	—	—	Leominster	2	—
Providence	—	—	Hyde Park	3	2
Boston	177	56	Melrose	4	2
Worcester	43	12	Newburyport	9	1
Fall River	33	16	Woburn	6	0
Cambridge	23	9	Westfield	1	1
Lowell	42	11	Marlboro	4	1
Lynn	19	5	Revere	1	—
New Bedford	33	15	Attleboro	2	0
Springfield	14	—	Peabody	—	—
Lawrence	23	6	Adams	4	—
Somerville	16	2	Clinton	3	1
Brockton	10	5	Gardner	2	2
Holyoke	10	2	Milford	—	—
Malden	9	2	Watertown	3	2
Chelsea	7	2	Plymouth	—	—
Newton	5	2	Weymouth	2	1
Salem	9	2	Framingham	—	—
Haverhill	6	—	Southbridge	5	—
Fitchburg	7	3	Wakefield	—	—
Everett	2	0	Webster	—	—
Taunton	17	5	Arlington	4	1

LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND OTHER OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED NOV. 18, 1908.

Kerr, J. W., assistant surgeon-general. Detailed to represent the Service at the Convention of Mayors of North Carolina at Charlotte, N. C., Nov. 17–18, 1908.

White, J. H., surgeon. Granted eight days' leave of absence en route to join station.

Cumming, H. S., passed assistant surgeon. Granted one month's leave of absence from Oct. 29, 1908.

Billings, W. C., passed assistant surgeon. Detailed as a member of a Revenue-Cutter Service Retiring Board at Baltimore, Md., Nov. 18, 1908.

Francis, Edward, passed assistant surgeon. Granted ten days' leave of absence from Dec. 1, 1908.

Burkhalter, J. T., passed assistant surgeon. Detailed as a member of a Revenue-Cutter Service Retiring Board at Baltimore, Md., Nov. 18. 1908.

Porter, Joseph Y., sanitary inspector. Title changed to read "Quarantine Inspector" from Dec. 1, 1908.

Barnes, W., acting assistant surgeon. Granted twenty-one days' leave of absence from Dec. 10, 1908.

Blanchard, J. F., acting assistant surgeon. Granted two days' leave of absence from Nov. 11, 1908.

Browne, R. W., acting assistant surgeon. Granted twenty-nine days' leave of absence from Nov. 20, 1908.

Carter, P. I., acting assistant surgeon. Granted five days' leave of absence from Nov. 2, 1908.

Curley, C. P., acting assistant surgeon. Granted three days' leave of absence from Nov. 18, 1908, under paragraph 210, Service Regulations.

Dynan, N. J., acting assistant surgeon. Granted one day's extension of leave of absence on account of sickness, Nov. 4, 1908.

Lyall, Robert, acting assistant surgeon. Granted four days' leave of absence from Nov. 6, 1908, without pay.

Marcoe, W. W., acting assistant surgeon. Granted thirty days' leave of absence from Dec. 2, 1908.

Stearns, H. H., acting assistant surgeon. Granted twenty-eight days' leave of absence from Dec. 4, 1908.

Thompson, W. R. P., acting assistant surgeon. Granted thirty days' leave of absence from Nov. 23, 1908, nine days with pay and twenty-three days without pay.

BOARD CONVENED.

Board of medical officers convened to meet at the Bureau, Nov. 23, 1908, for the purpose of making final revision of the regulations for the medical examination of arriving aliens. Assistant Surgeon-General H. D. Geddings, chairman; Surgeon Geo. W. Stoner, Passed Assistant Surgeon J. W. Schereschewsky; Acting Assistant Surgeon M. V. Safford, recorder.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING NOV. 28, 1908.

Dessez, P. T., passed assistant surgeon. Ordered to temporary duty at the Naval Hospital, Mare Island, Cal. Nov. 20.

Hale, G. D., assistant surgeon. Detached from the "New Hampshire" and ordered to the "Idaho." Nov. 21.

Munger, C. B., assistant surgeon. Detached from duty at the Naval Hospital, Portsmouth, N. H., and ordered to the Naval Proving Ground, Indian Head, Md. Nov. 21.

Hough, F. P. W., assistant surgeon. Detached from the Naval Proving Ground, Indian Head, Md., and ordered to the "New Hampshire." Nov. 21.

Norton, O. D., surgeon. Detached from the Naval Recruiting Station, New York, N. Y., and ordered to continue duty in attendance upon officers and enlisted men of the Navy and Marine Corps in New York, N. Y., not otherwise provided with medical attendance. Nov. 25.

SOCIETY NOTICE.

Medical Library Meeting in Conjunction with Suffolk District Medical Society. — A meeting will be held at the Medical Library on Dec. 16, at 8.15 p.m. The following papers will be presented: "The Medical Treatment of Cancer," by George W. Gay, M.D. Discussion: "The Treatment of Malignant Disease with Radium," by Francis H. Williams, M.D. "The Treatment of Malignant Disease with X-Rays," by Samuel W. Ellsworth, M.D. "The Treatment of Malignant Disease with Trypsin," by William P. Graves, M.D. "The Surgical Treatment of Malignant Disease," by Fred B. Lund, M.D., and J. Bapst Blake, M.D.

Edwin A. Locke, M.D.

RECENT DEATHS.

Hermon Cooper, M.D., M.M.S.S., died in Amesbury, Mass., Nov. 10, 1908, aged forty-nine years.

Gabriel Pellet Reeves, M.D., a well-known retired physician of Yonkers on the Hudson, died on Nov. 25, in the one hundredth year of his age, having been born at Minisink, N. Y., on Jan. 21, 1809. He was graduated from the medical department of the University of the City of New York in 1845, and first practised in Orange County, N. Y., where he served as County Physician and Secretary of the County Medical Society. He came to Yonkers in 1857.

BOOKS AND PAMPHLETS RECEIVED.

Arteriosclerosis: Etiology, Pathology, Diagnosis, Prognosis, Prophylaxis and Treatment. By Louis M. Warfield, A.B., M.D. With an introduction by W. S. Thayer, M.D. Illustrated. St. Louis: C. V. Mosby Medical Book Co. 1908.

The Practitioner's Visiting List. 1909. Philadelphia and New York: Lea & Febiger.

The Surgery of the Ear. By Samuel J. Kopetzky, M.D. Illustrated. New York: Rebman Co. 1908.

Proceedings of the American Medico-Psychological Association at the Sixty-third Annual Meeting held in Washington, D.C., May 7–10, 1907.

The American Society of Tropical Medicine. Papers read before the Society and published under its auspices. Vol. 3, 1907–1908.

Russell Sage Foundation. Medical Inspection of Schools. By Luther Halsey Gulick, M.D., and Leonard P. Ayres. New York: Charities Publication Committee. 1908.

Fortieth Annual Report of the Secretary of State on the Registration of Births and Deaths, Marriages and Divorces in Michigan for the Year 1906. Lansing, Michigan. 1908.

Original Articles.

THE SUBCUTANEOUS, CUTANEOUS AND CONJUNCTIVAL USE OF TUBERCULIN IN DIAGNOSIS. TECHNIC. RELIABILITY. RESULTS OF ANIMAL EXPERIMENTATION.*

BY FREDERICK T. LORD, M.D., BOSTON,

Physician to Out-Patients, Massachusetts General Hospital; Visiting Physician to the Channing Home; Assistant in Clinical Medicine, Harvard Medical School.

Is it not extraordinary how rapidly advances are made in medical progress, and, when they are made, does it not often seem even more extraordinary that they were not made before? Is it not remarkable that eighty-three years should have elapsed between Laënnec's work and Grocco's description of so obvious a physical sign as the paravertebral triangle of dullness opposite a pleural effusion? In more technical matters, as in the bacteriology of typhoid fever, is it not surprising that so important a feature in diagnosis and epidemiology as the almost constant presence in the blood of typhoid bacilli, in the first week of the disease, should have been so long overlooked? The recent revelations in regard to tuberculin are perhaps even more surprising, for they might have been immediately suggested to the careful reader of Koch's original publications on this subject.

The use of tuberculin for diagnosis and treatment dates from its discovery by Koch in 1890. The publications of Virchow, who claimed that in fatal cases, previously given tuberculin, there was evidence of more rapid extension of the tuberculous process, did much to prevent its more general use. Nevertheless, tuberculin has been employed in most of the larger hospitals everywhere since its discovery. In the past few years it has gradually grown in favor, both for diagnosis and treatment.

Koch's original product, known as old tuberculin, is the only preparation generally used for diagnosis. This is merely a sterilized, filtered and concentrated glycerine bouillon culture of tubercle bacilli. The resulting product, after standardization, is old tuberculin. Owing to considerable variation in the rate of growth of different cultures, to variation in the virulence of different strains of tubercle bacilli, and the necessary dependence only on biological action for standardization, separate products from the same or different makers inevitably vary somewhat in their strength. This should be remembered in testing a preparation in use for the first time, and a product with which one has become acquainted by repeated trials should be more highly prized. It should be remembered, too, that tuberculin may lose its power if diluted or exposed to the light. It is susceptible of contamination and should be kept undiluted, in the dark and in the ice-chest. Its high contents of glycerine, fortunately, serves as a partial safeguard against contamination. It should be handled as carefully as culture material, and specimens which have become clouded should be discarded.

From the discovery of tuberculin until about a year ago, its injection under the skin was practically the only method in which it was used for diagnosis. It is interesting to note that Koch,[1] in his researches leading to tuberculin, anticipated the discovery of simpler methods of its administration when he noted an extensive necrosis at the point of inoculation in tuberculous animals injected with non-lethal doses of dead or living cultures of tubercle bacilli. In April, 1907, Von Pirquet [2] published his discovery of a reaction in tuberculous subjects from the cutaneous application of tuberculin.[3] This was suggested by the occurrence of a reaction at the site of inoculation with cowpox in patients previously successfully vaccinated. On May 15, 1907, Wolff-Eisner [4] reported the observation, made in the course of various experiments with tuberculin, that tuberculous patients also respond to the application of 10% tuberculin to the conjunctiva. Calmette [5] only a month later published his independent discovery of the conjunctival test and gave it the name of "*ophthalmo-réaction.*"

Before considering these more recent tests, I should like to review, briefly, the prevailing opinion as to the best method of administering tuberculin by the older injection method.

I. INJECTION METHOD.

The tuberculin is best given, as originally recommended by Koch, beginning with the injection of $\frac{1}{10}$ mgm. for weak and 1 mgm. for robust patients. If this test is negative, the injection is repeated with a larger dose on the third day. The increase in dosage may well be from $\frac{1}{10}$ or 1, to 3, 5 and 7 or 10 mgm. In all cases in which a reaction is obtained it should be confirmed by a repetition of the last dose. Previous to the injection, the patient should have been shown to be free from fever over a period of at least two days. Following the injection the temperature should be taken every two hours and the test regarded as negative only after forty-eight hours have elapsed. The injection should be deeply subcutaneous in the mid-scapular region. Superficial injection into the skin may result in painful induration, and injections into the more delicate tissues of the extremities may also lead to uncomfortable local symptoms. The late afternoon or evening is the best time for the injections, after which a reaction, if it occurs, usually takes place within eight to twenty hours, and thus the patient's sleep is not likely to be disturbed.

A positive test is indicated by a rise of temperature, which may amount to no more than one half a degree Fahrenheit and is usually accompanied by induration, with pain, redness, swelling and tenderness at the site of the injection, and such general symptoms as headache, malaise, oppression, an aggravation of cough and at times by nausea and vomiting. During the application of the test the patient should be continuously under observation, but it is unnecessary to confine him to bed. I do not believe that the injection method can be reliably performed. in other than exceptional instances, in ambulant patients in out-patient clinics. The best results are obtained in an institution or at home with a nurse.

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* Presented by invitation at the meeting of the Rhode Island Medical Society, Providence, R. I., Sept. 3, 1908.

The test is frequently performed by the injection of single large doses of tuberculin. but severe and long-continued reactions, even death in unsuitable cases, may result in rare instances. In view, also, of the marked hyperemia so commonly observed about tuberculous foci, in animals killed with large doses of tuberculin, I cannot believe that initial large doses in individuals whose susceptibilities are unknown are safe. The test cannot be used in the presence of fever. It is dangerous within a month of hemoptysis, with extensive tuberculosis, in heart disease, diabetes, nephritis, epilepsy, pregnancy, meningitis and Addison's disease.

The most convincing data concerning the reliability of the test relate to autopsy findings in cases previously tested. Time does not permit of a consideration of these in detail. For cattle, the combined statistics of Voges [6] show how reliable the test has proved. In infants, the statistics of Mettetal [7] and Binswanger [8] show almost without exception a correspondence between the results of the injections and autopsy findings. In adults, Mikulicz [9] by the clinical course or the investigation of excised tissue at operation and Faunce [10] by autopsy found the results of the test confirmed.

The testimony of those with the greatest experience in the use of the subcutaneous test is that it is harmless. Thus, in 20.000 injections, Löwenstein [11] has seen no severe disturbances or death. Koch [12] in 3.000 cases saw no bad results. Although it is apparently harmless when properly given, and in selected cases, yet the test is not one to which every patient will willingly submit. It may take ten days or more to perform the test, and during this time in most cases the occupation must be given up. Nervous patients are often excited by the injections. Moreover, technical experience is required in the handling of the tuberculin and the dosage. It is largely for these reasons that the test has never come into general use outside of hospitals and sanitaria.

II. CUTANEOUS TEST.

The external surface of the upper arm is a convenient site for the inoculation. The skin should be prepared over a wide area by first washing with soap and water, alcohol and ether. One drop of old tuberculin is placed on the arm. Various dilutions of the tuberculin have been used. A 25% solution is usually employed. We have recently used the tuberculin undiluted, as suggested by Von Pirquet. This has the advantage of simplifying the procedure and the results are apparently equally good. As a control we have used the glycerine-bouillon culture material, prepared exactly as for the manufacture of tuberculin, but without the bacilli. A drop of this is likewise placed on the arm at a distance of about an inch and a half to two inches from the tuberculin.

The skin underlying the two drops is then scratched with the point of a sterile needle, beginning first with the control and passing next to the tuberculin. The scratching should be deep enough to open the lymph channels, but it is unnecessary to draw blood. Experience only can teach just how firm the pressure should be. The two drops are left in contact with the arm for about ten minutes, then the excess of fluid is removed with sterile gauze. No bandage or other application is needed.

Within a few minutes after the inoculation there is an *initial reaction*, in which both inoculated areas show a small elevated white area, resembling an urticarial wheal, about which there is a wider zone of hyperemia. This disappears in the course of a few hours.

In cases in which there is a *positive reaction*, a delicate zone of redness appears about the inoculated area in about five hours. This gradually increases in size. The reaction is at its height usually in forty-eight, rarely in twenty-four, hours. Over the scarified area and its immediate neighborhood, small whitish elevations may be found. These may amount to small vesicles containing serum. In rare instances the vesicles may be of considerable size, but do not form pustules. The zone of surrounding redness has now increased and may reach a diameter of from ten to thirty millimeters. On palpation a distinct induration may be felt. At times the zone of surrounding hyperemia may extend some distance in the form of tapering streamers. Von Pirquet suggests that a reaction under 5 mm. in diameter should be regarded as doubtful.

The reaction begins to subside after forty-eight hours. The vesicles gradually disappear. The surrounding hyperemia changes gradually from red to a more dusky color, with a purple or violet tinge, and finally desquamation takes place, leaving a pigmentation which may persist for weeks.

The control does not react, unless, as sometimes happens, its site has been overflowed by the tuberculin.

Of contra-indications and dangers there appear to be practically none. Oppenheim [13] observed a small torpid ulceration in a "scrofulous" subject and lichen-like papules about the site of inoculation, in a patient with lichen scrofulosorum. Engel and Bauer [14] saw severe reactions in "scrofulous" children. It has occasionally been noted that following the inoculation of tuberculin by cutting rather than scratching there has been fever and local reaction about superficial and distant tuberculous foci.

III. CONJUNCTIVAL TEST (WOLFF-EISNER). OPHTHALMO-REACTION (CALMETTE).

For this test, Calmette recommends a specially prepared precipitate, by alcohol, from old tuberculin. Its dilution into 1% solution appears to be considerably stronger than a similar dilution of old tuberculin untreated with alcohol. Equally good results may be obtained with ½ and 1% old tuberculin, diluted with physiological salt solution.

The method of application is very simple. The patient is conveniently placed in a sitting position with his head bent backward. The lids are then held apart and for the first test one drop of the $\frac{1}{2}\%$ solution is placed in the conjunctival sac. The operator continues to hold the lids apart for one to two minutes, the patient being cautioned meanwhile not to wink and thus expel the tuberculin.

In positive cases, the reaction begins usually after from three to six hours, is at its height in twelve to twenty-four hours and gradually subsides. There is hyperemia of the conjunctiva of the lower lid, the caruncle and the lower bulbar conjunctiva, with slight swelling, injection of the vessels and increased secretion. The varying intensity of the reaction in different patients has led to a recognition of three grades, first, with redness of the palpebral conjunctiva only, a second group with more marked hyperemia and involvement of the bulbar conjunctiva and, finally, a class in which both palpebral and bulbar conjunctivæ are involved, with œdema of the lids, photophobia and marked secretion.

The insufflation is best made in the late afternoon or evening and should be inspected the next morning and, if necessary, again in the afternoon or evening. If the first test is negative, a second with 1% tuberculin may be made in the other eye after forty-eight hours. A conjunctiva once tested cannot with safety again be subjected to tuberculin owing to the possibility of severe reactions after such repetition.

The eye test is contra-indicated in the presence of any inflammatory lesions of the eye or conjunctiva whatsoever, even redness of the conjunctiva. Exposure to dust or smoke should be avoided during the test.

The conjunctival test does not appear to be quite harmless. Many severe reactions have been reported. Among others, Eppenstein,[15] using 1% tuberculin, noted phlyctænular conjunctivitis in two and a mild keratitis in one patient. Von Pirquet[16] saw a severe conjunctivitis lymphatica, recognizable after a month as a slight granular swelling of the conjunctiva. Wiens and Günther[17] observed long-continued conjunctival catarrh, obstinate phlyctænular of the lid margins and severe ecchymoses, with 1% Calmette's solution. With $\frac{1}{2}\%$, also, they saw occasional severe lesions and once a pannus scrofulosus. Schenck,[18] with $\frac{1}{2}\%$; then 1%, old tuberculin in the other eye noted two with phlyctænular conjunctivitis among 100 cases. Levi[19] with 1% old tuberculin had several cases with reactions reaching the third grade and much discomfort. There were also two cases of severe purulent inflammation among his 120 cases. The persistence of inflammation in the conjunctiva is not uncommon. Mackay,[20] using 1% precipitated tuberculin, observed a severe conjunctivitis, which persisted after ten weeks as a little redness of the conjunctiva, slight photophobia and some narrowing of the palpebral fissure.

Owing to the rather formidable number of unpleasant results with the conjunctival test, I have never used it. It would seem safer from the reports in the literature to use freshly made dilutions of old tuberculin than the precipitated tuberculin of Calmette's formula.

IV. SENSITIZATION. PROGNOSIS.

Various observers have noted that a repetition of the tuberculin test leads to positive reactions in previously negative cases, or a more intense reaction in previously positive cases. For the subcutaneous method, Löwenstein[21] has observed that an initial injection of 10 mgm. of tuberculin may cause a less intense reaction than 10 mgm. reached in successive and ascending doses and that a repetition of $\frac{2}{10}$ mgm. may cause, on the fourth injection, a reaction only slightly less intense than that with 10 mgm. With the skin test, Von Pirquet[22] found that previously negative cases at times become positive and previously positive cases reacted more strongly when the test was repeated. Levy[23] and Cohn[24] have noted with the eye test that its repetition may cause reactions in previously negative cases. According to Cohn this is true for adults and not for infants and may obtain in tuberculous individuals for the eye not already tested. It cannot be regarded as settled, however, whether reactions can thus be produced in non-tuberculous individuals (Cohn) or occur only in the tuberculous, as Wolff-Eisner[25] believes. Wolff-Eisner regards the non-tuberculous as insusceptible to sensitization and goes so far as to ascribe to the phenomenon of sensitization the possibility of indicating inactive lesions. The failure of infants to react to repeated tests is in favor of the specificity of reactions produced even after repetition. The reappearance of skin or eye reactions, following the administration of tuberculin subcutaneously, has been noted by a number of observers.

Our failure to produce reactions in non-tuberculous animals after attempted sensitization with old tuberculin[26] suggests that reactions with this substance are not likely to occur in the non-tuberculous.

Wolff-Eisner[27] ascribes to the varying intensity of the skin and conjunctival test a prognostic significance in tuberculous cases. He believes that in general an intense response is favorable in incipient cases and may indicate a tendency to heal or a slow course in advanced cases. Slight reactions he regards as unfavorable, and a failure to respond in advanced cases may indicate a fatal termination.

V. RELIABILITY OF THE SKIN AND CONJUNCTIVAL TESTS.

This is most conveniently considered under the following headings:

(A) In Man.[28] (1) *By comparison with clinical findings.* — For the cutaneous test, the statistics of Von Pirquet embrace the largest number of cases. Only children up to fourteen years of age are included.

Of 130 clinically tuberculous cases, 113 (87%) were positive; of 512 non-tuberculous cases, 104 (20%) were positive; of 115 doubtful cases, 56 were positive.

The combined statistics of Petit on observations made with the eye test and for the most part in adults show that of 740 clinically tuberculous cases, 698 (93.4%) were positive; of 938 non-tuberculous cases, 173 (18.4%) were positive; of 185 doubtful cases, 114 were positive.

It will be noted that the results of the eye test correspond more closely with the clinical findings.

(2) *By comparison with autopsy statistics.* — In this group, likewise, Von Pirquet has analyzed the largest number of cases. Among his 988 patients with cutaneous tests, grouped according to age up to fourteen years, the proportion showing reactions corresponds very closely with the proportion of cases showing tuberculosis at autopsy in the same age groups in Hamburger's[29] 848 cases. In both series tuberculosis was disclosed only very rarely during the first six months. The two curves then rise in nearly parallel fashion to an incidence of about 70% for tuberculosis by the skin test and the post-mortem examinations at ten to fourteen years of age. The practical absence of tuberculosis by both methods of investigation in early infancy has been noted by many observers. It is confirmatory of the specificity of the skin test and emphasizes the already firm conviction of the post-natal origin of tuberculous infection.

Von Pirquet estimates that about 90% of all hospital patients and about 70% of the clinically non-tuberculous respond to the skin test. It may be recalled in comparison that Naegeli believes tuberculosis to be present in 96% of all autopsies in which tuberculosis is not the cause of death.

It appears from the statistics presented that the proportion of conjunctival reactions in patients apparently free from tuberculosis is far below the percentage with the skin test.

(3) *By autopsy on the cases tested.* — For the skin test, Von Pirquet reports 124 autopsies on children previously tested by the cutaneous method. Sixty-four cases were without tuberculosis at autopsy and all were negative with the skin test. In 14, tuberculosis was present, but not as a cause of death; and of these, 10 were positive, 4 negative. Of 45 cases in which tuberculosis was the cause of death, 31 were positive, 14 negative.[30] One case showed "status lymphaticus," but no tuberculosis. In this patient, the skin test had been positive.

For the eye test, Comby[31] reports 10 positive cases, all confirmed by autopsy. There were 8 similar cases in Petit's series with a like confirmation.

(4) *By comparison with the injection method.* — In general, when used in the same series, the subcutaneous, the conjunctival and the cutaneous tests have corresponded. The possibility of sensitization to tuberculin by the first method used has been thought to invalidate conclusions drawn from such series. To judge from different series, however, the skin test is evidently the most sensitive of the three methods, while the subcutaneous and conjunctival tests are more nearly parallel in their indications. Thus, Von Pirquet's estimate of 90% of skin reactions in all hospital patients far exceeds Madison's[32] 40% of positive subcutaneous injections in 400 insane women at the Danvers Insane Hospital, and Raviart's[33] 43% of positive conjunctival tests in 623 insane patients.

(*B*) In Animals.[34] Experiments with the skin or eye test in tuberculous guinea pigs or rabbits have usually been negative (Daniëls,[35] Levi,[36] Wolff[37]), or positive in only exceptional instances (Nobecourt and Mantoux,[38] Joannovics and Kapsammer,[39] Lüdke[40]). In larger animals, Vallée[41] obtained positive skin and conjunctival tests in tuberculous cattle and horses, while Arloing's first experiments[42] with the skin test on cattle, horses, dogs, one rabbit and a guinea pig were negative, although in a later publication[43] he reports positive skin tests in one of 2 calves and one of 3 dogs. Lignières[44] obtained constantly positive results with the skin and conjunctival tests in 200 cattle.

My experiments[45] with the conjunctival test in guinea pigs at the Massachusetts General Hospital are in favor of the specificity of a reaction. All of 10 animals artificially infected with either bovine or human tubercle bacilli and tested at intervals with undiluted old tuberculin have shown positive tests at some period in the course of the infection, while 25 non-tuberculous control animals were negative. The reaction usually begins in from two to four weeks after infection. It is usually at its height in seven to eight hours after the test is made and may have subsided in twenty to twenty-four hours. After the reaction has once appeared it is not invariably present and is, therefore, somewhat unreliable for the detection of tuberculosis in guinea pigs. No differential quality[46] in the corresponding or different tuberculin has been observed in the different types of infection.

In conclusion, it must be admitted, I believe, that reactions with any one of the three tests, when properly performed, indicate tuberculosis somewhere in the body. It may not be where our clinical data lead us to suspect it, and reactions may occur in the presence of latent, inactive as well as active, foci. This must be constantly in mind in applying the results of the test to individual cases. In patients suspected of tuberculosis, a positive test is only one more factor to be considered in establishing the diagnosis, while a negative test is of much greater value and goes far toward disproving the tuberculous character of the disease in question.

Of the three tests, Von Pirquet's cutaneous method appears to be quite harmless and reliable. It is probably more delicate than the conjunctival and subcutaneous tests and hence more often responds to latent, inactive and unimportant foci. So far as can now be judged, there need be no hesitation in its application. I am personally disinclined to the use of the conjunctival test, but so far as I can learn no serious or permanent damage has resulted from it. In my clinic at the Massachusetts General Hospital, it has thus far been possible, through the Social Service Department, to investigate the homes of children who react to the skin test and to give special advice on hygiene and home sanitation.

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[46] This note was added in the correction of this manuscript.

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A CLINICAL STUDY OF THE TRANSMISSION AND PROGRESS OF TUBERCULOSIS IN CHILDREN THROUGH FAMILY ASSOCIATION.*

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THE solution of any great problem vitally affecting the welfare of the nation should be applicable first to the home, that unit of national foundation. Where the home is menaced, the state is always endangered. Tuberculosis invariably has been a disease of the household, a fact the more true with the fast growth of municipal communities. Not only is it a distinct danger to the family, but from the very nature of its chronicity an enormous economic loss to the community.

In endeavoring to control tuberculosis, proper consideration should be given to the child. It is frequently the children of to-day that are the consumptives of to-morrow, being handicapped by heredity and exposed through family associations. The problem, therefore, must be large enough to embrace the sick and the endangered as well. The work in Boston has included not only the phthisical patient, but also his family. Records of the public charities and hospitals have been searched in quest of cases of tuberculosis. Where disease has appeared within the past four years the household has been visited and investigated, and again and again the need of medical supervision has been most apparent. In this way the incipient case has been discovered, predisposition controlled and the well retained in health.

INFLUENCES FAVORING INFECTION IN THE CHILD.

The effect of tuberculosis on the mortality of early years shows its influence to be greatest during infancy. This death-rate after repeated observations appears to decrease slowly as the child grows older. Susceptibility is at its height in this early period, and where a predisposition through heredity is added to a soil not unfavorable for the growth of the disease, the chance of infection is vastly increased. Children are peculiarly susceptible to unhygenic surroundings. Overcrowding, lack of fresh air and sunlight, dirt, neglect and improper food, the natural environments of the majority, merely increase the normal low resistance of the child at this period.

The influence of measles, whooping cough and influenza are known to have a powerful predisposing effect in contracting tuberculosis. The activity of the lymphoid tissues of the body in early life and the onset of puberty are likewise physiological phenomena of considerable importance.

It must not be forgotten, however, that the habits and characteristics of the child in daily life have an important part to play. The close intimacy of child with child, its parents and neighbors, in school and at home, materially aid in the spreading of the disease.

The mere presence of tuberculosis in the household is of the utmost importance to the welfare of the child. For in each home, even where cleanliness of person and habits of the consumptive are ideal, there is still a minimum amount of danger of infection. On the other hand, where carelessness and ignorance abounds, contagion is not only probable, but very frequent.

MODES OF INFECTION.

The modes of infection must necessarily be various and frequently multiple where we deal with constant exposure to disease. Infection by transmission through the aural passages has been with us a negative quantity. The two great paths of infection, ingestion and inhalation, have contributed greatly without doubt, but which manner of infection occurred in an individual case was impossible to determine.

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* Read at the International Congress on Tuberculosis at Washington, September, 1908.

In our study of 1,000 children it appears that whatever the mode of entrance might have been, most probably direct transmission of the disease from parent to child was the most important factor. Of these cases 679 have been in immediate contact with tuberculosis in the home. Of this number 36% showed definite signs of pulmonary consolidation. This type of infection has been strikingly demonstrated in a large number of instances. Following one open case of tuberculosis in a parent, evidence of the disease was found in all but one of five children. Not only in one but in many families has this been found true.

The respiratory tract is not the only vulnerable point in the youthful organism to be attacked. The lymphoid tissues of the throat, adenoids and tonsils, especially, present a very favorable point of entrance for the tubercle bacillus. They aid directly in the transmission of the disease and by obstructing the upper air passages favor the production of pulmonary tuberculosis, through improper breathing.

The systematic laryngoscopical examination of our cases shows about 50% (some 493 children) to have hypertrophied tonsils, while operable adenoid growths appeared in only 14.5% (some 145 children). Tonsillotomy and adenoidectomy, even when imperative, were necessarily rarely performed on account of popular prejudice. Of the few operated on, no tubercles were demonstrable pathologically in the tissues removed.

In only eleven instances did infection point to the glands of the neck, and of this number only five showed pulmonary involvement. In regard to the localization of infection in bone or joint, except for four cases of tuberculosis of the hip and one of the finger, this type of infection has been wanting.

Invasion of the serous cavities (the peritoneum and meninges) was discovered in only two or three instances. This is of interest when we note, from the report of a small phthisical hospital, that eleven children out of twenty-four born of tuberculous mothers died of tubercular meningitis.

INCIDENCE.

The early detection of intrathoracic tuberculosis in the infant or child is frequently one of extreme difficulty. Frequently the actual condition in the lungs is only suspected and a positive diagnosis is not made until lesions are extensive or general miliary disease supervenes. The explanation of this state of affairs lies in the peculiar anatomical condition in the chest of the child, where the pathological process must be of relatively large extent to be evident. The chronic sore throat, persistent laryngitis with its cough, so frequently occurring in the children of the poor, withdraws attention from the lungs. The presence of pulmonary disease is frequently obscured by the presence of measles or pertussis. The non-appearance of sputum is a serious handicap. With children under constant supervision this difficulty may be obviated, as shown by Holt, but the dispensary clinic cannot so readily profit by the swab method. We have been able to collect sputum in only 62 of these cases, and in only 3 of these were bacilli present.

An accurate estimate of the extent of pulmonary tuberculosis in early life is difficult to obtain and wide diversity of opinion exists in regard to it. Morse says that pulmonary lesions are comparatively rare before puberty but are of more common occurrence in childhood than in infancy. Squire says of phthisis in the United Kingdom that it is the most common and fatal of all diseases of infancy and childhood. The registrar-general's report for 1903 for England and Wales showed a total of 16,650 cases. On the other hand, systemic examination of school children in London has shown that among 1,670 only 8 showed signs of phthisis, or .47%, and when those with doubtful signs were taken into account, it made a total of 1.3%. Mackensie found 18 cases in 600 school children in Edinburgh and Robertson found 6 cases amoung 806 in Leith. Leubuseber found 2 cases in 1,400 school children in Germany, while Grancher, in Paris, found some 15% of 4,226 children gave evidence of glandular or pulmonary tuberculosis. This author also finds about 25% of children of tuberculous parents are tubercular or so predisposed. These results were obtained in the examination of the average school child, the majority being apparently well and not exposed to the disease.

In some 679 children drawn from the poorest homes of Boston, of which about 570 contained living consumptives, and in 179 others, there had been recent deaths from the disease, there were definite signs of pulmonary involvement in 36%. More than 66% of the entire number showed signs or symptoms of the disease. In 321 children living in poverty and neglect brought for examination on account of suspicious symptoms, about 30% were looked upon as tuberculous, although not directly exposed in the home.

In regard to post-mortem statistics, J. Comby has published reports from the hospitals of Paris, showing that 38.5% of the children examined showed tubercular lesions. Muller, in Munich, found 43% out of 500 examinations; Hamburger and Sluka discovered 41% in 401 post-mortems in children under fifteen years of age. These figures apply to tuberculosis occurring anywhere in the body in children dying from various causes. Hamburger's tables showed that pulmonary infection was present in 50% of the cases, and the bronchial glands were involved in 98%. In all necropsy reports, however, it should be remembered that many tubercular foci may have occurred secondary to the terminal disease and many more are never discovered in life. These reports are taken from general hospitals. If autopsies could be obtained on a series of children such as we have had under observation, very few would probably be found free from tuberculosis. It is interesting to note that the total percentage of cases showing pulmonary tuberculosis at necropsy closely tallies with our records of cases diagnosed as pulmonary tuberculosis.

OTHER FACTORS INFLUENCING INFECTION.

As to the question of how large a part is played by milk in the production of tuberculosis in children especially, McCaw calls attention to the fact that of 26,193 cases under treatment for various disorders in Belfast, 20% under five years showed tuberculosis, and of these, 40% were of the surgical type (bone and glandular). In other English cities, as London, Manchester, also in Glasgow and Edinburgh, the predominance of surgical tuberculosis treated in hospital clinics has been marked. McCaw further states that the general concensus of opinion is that surgical tuberculosis is generally of the bovine type and that the bovine and human infections do not commonly occur in the same case. With us where infection was probably due to the human type in the great majority of instances, every opportunity of infection being at hand, only 11 cases of glandular tuberculosis and 5 of bone infection occurred. It must be remembered that these were not selected cases, only in so far as every exposed child possible was examined. Why, then, has it happened that the surgical types (bone and glandular forms) have been so infrequent? This question we cannot answer unless we take the position that surgical tuberculosis is produced by the bovine bacillus, while in our cases the human type of infection has been reproduced by direct transmission.

Concerning the period of latency of phthisis in children, it would seem from a number of observations that, following direct exposure, a few months only intervened before active signs and symptoms appeared. In others, however, the intervals have been considerably longer. The great difference of susceptibility to tuberculosis in different children has been very noticeable; even in similar surroundings and exposed for the same period of time they vary much in this respect.

The size of the cardiac area in its relation to the development of phthisis is often important. In the measurement of some 800 children our results were remarkably uniform, both as to age and development. In a very few the cardiac area was distinctly undersized. Even in the poorly developed and nourished, the heart did not seem to have suffered in development. Valvular lesions were infrequent, only 10 cases of mitral regurgitation and 2 of mitral stenosis being present.

TYPE OF DISEASE. INFANT OR ADULT.

The grouping of the lesions of tuberculosis into the infantile and adult types, which is so commonly seen in hospital clinics, has not been observed by us. In any large children's hospital two types of tuberculosis are common, the general disseminated and the chronic phthisis of the adult. The latter group, chronic phthisis, includes practically all of our cases, only two cases of general miliary tuberculosis being detected, one of which was proven at autopsy. What this means in regard to individual susceptibility we do not know. In these cases, perhaps infection has been on small repeated doses, and the stimulation of body resistance thereby has prevented diffuse lesions. Be this as it may, the great preponderance of the adult type of lesion is certainly noteworthy.

SYMPTOMS AND SIGNS.

Many a child with few or no symptoms will, in the study of a phthisical family, show on examination real evidence of tuberculosis in some portion of the body. The acute respiratory symptoms often following measles or associated with the common cold will often be overlooked and later a semi-quiescent pulmonary lesion be discovered. With the repetition of colds and sore throat, from neglect or bad naso-pharyngeal conditions, the pulmonary process may light up and, increasing in extent, make itself apparent. The presence of languor, pallor, loss of strength and appetite are first noted. Night sweats are frequent, loss of weight rapid and cough frequently constant and distressing. Hemoptysis is uncommon. Slight evening pyrexia is most significant. Cough, however, is so common in the child that too much weight must not be placed upon this symptom. Young examined some 337 children under fifteen years of age in trying to estimate other etiological factors for cough besides pulmonary tuberculosis. Of this number only 45 showed pulmonary lesions.

In our list of 1,000 cases some 262 showed involvement of one or both apices of the lungs. In about 100 others the lesions were equally divided between the middle and lower lobes. The extent of the lesion varied greatly and apparently had little connection with the length of exposure to infection. Very few lesions had advanced to cavity formation, and where the disease was extensive the process generally took the type of acute bronchopneumonia with septic manifestations.

DIAGNOSIS BY VARIOUS MEANS AND THEIR VALUE.

The younger the child the more difficult it is generally to diagnose the lesion, especially in its incipient stage. A careful consideration of the family history, clinical symptoms and signs is imperative in order to arrive at a correct conclusion. In the differential diagnosis of chronic pulmonary lesions the group of symptoms and signs in children may be closely simulated by a number of conditions. Phthisis and asthma may frequently be associated and we should not be misled by the more evident process. The diffuse catarrhal lesions in the lungs, the expiratory distress and characteristic sputum, if it can be obtained, may aid us in the detection of the latter. The symptoms following acute nasal and throat infections are often confusing and unless the upper air passages are studied the diagnosis may long be uncertain. The cough in tonsillar hypertrophy with naso-pharyngitis, expectoration of mucus, general debility and loss of strength, often make it impossible to exclude a beginning pulmonary lesion. When tuberculosis of the bronchial glands is present, with night sweats, cough and dyspnea, in addition, perhaps, to local signs at the upper portion of one of the lungs, it requires time to settle the question whether the lesion is pulmonary or otherwise. The recurrent attacks of bronchitis often are followed by phthisis and may later hide it. Even after we have learned all that clinical methods can tell us, many conditions will be obscure and laboratory methods will be demanded. Repeated examination of the sputum, when it can be obtained, will often aid, and occasionally tubercle bacilli will be found when the pulmonary examination is negative. Where the laryngologist is at hand this may be collected from the larynx on a swab. In older children, with training and the aid of an expectorant, sputum can be obtained in a considerable number of cases. The use of the stomach tube to get swallowed mucus will probably be a method mostly confined to hospital practice. The use of tuberculin will be of real value and may stamp many a doubtful case as tuberculosis. The use of tuberculin subcutaneously is the most accurate diagnostic means we have and its prompt and definite reaction, general and local, will tell us not only that the case is tuberculosis, but often where the process is located. The use of the cutaneous and ophthalmic reactions we have found of great value, especially on account of their simplicity. With the cutaneous reaction there are rarely any constitutional symptoms and no dangers. It is generally reliable in its results, but in how large a percentage of cases of tuberculosis a positive reaction occurs is still undetermined. Engel and Bauer, having used the cutaneous reaction on some 300 cases, conclude it is of great diagnostic value. Our use of the ophthalmic reaction has been of value in confirming our suspicions in a number of cases as to the presence of tuberculosis. With the increasing number of reports of injury done to the tested eye, and since in our experience we have had 3 cases of phlyctenular conjunctivitis, we have relied on the other methods of administration. In a number of cases we have used both methods and found them frequently to give identical results, and then again one was positive and the other negative. In 14 instances where the cutaneous reaction was negative the ophthalmic was positive. In 73 children giving a negative examination, 30 gave a positive tuberculin reaction. In 174 children suspected of tuberculosis, 112 gave a positive reaction. We feel that our use of these newer methods of giving tuberculin as an aid to diagnosis has been of value in confirming our suspicions in many a doubtful case and in leading us to place more value upon slight signs and symptoms.

The use of the x-ray in conjunction with these other measures has been of great value, especially as we have had an expert to interpret our radiographs. We have learned that the most careful examination will fail to detect the true extent of the tubercular process and one that appears well localized may be very diffuse. Not one but all means and agencies at our disposal have been used in attempts to reach a decision, and even then time and repeated observations have been necessary.

TREATMENT.

In our community, while the educational movement is rapidly making progress in regard to tuberculosis among all classes of people, the full realization of our duty to children has not been appreciated. No adequate provision has yet been made to place these children in good environment that they may regain their health. The work of removing the infected member of the family is being well worked out, but until we can care for all the ignorant and careless consumptives our problem in regard to children will continue to be a large one. Much, however, can be done through isolation, education and cleanliness. A considerable number of children we have had under observation in day camps and in the country. The results have exceeded our expectations. Not only has the general improvement been rapid, but a number of active lesions have become quiescent after a few weeks' treatment. It would seem that the child at its receptive age is peculiarly open to ideas in regard to hygienic living, and the recuperative power of the body at this stage in development gives great promise of successful results in treatment.

PROPHYLAXIS.

In order, then, better to protect our children, several measures are important.

1. Early notification of all births.
2. Better inspection and control of the cities' milk supply.
3. Systematic school inspection.
4. Housing reform.
5. Segregation of advanced cases.
6. Required notification of the disease.
7. Provision for the care of pulmonary tuberculosis in children.
8. Education of all school children on matters of general hygiene. Nearly all these measures are being enforced in Massachusetts and, as the forces of sanitation and education advance, the solution of the problem of tuberculosis is nearer.

STATISTICS.

Number of children:	
Boys,	475
Girls,	525
Total,	1,000
Ages of children treated:	
One year and under,	35
Between one and five years,	249
Between five and fifteen years,	716
Total,	1,000
Total exposed to tuberculosis in the home,	679
Total not exposed to tuberculosis,	321
Total,	1,000
Family history:	
Homes with phthisical patients in them,	500
Homes with history of a death from phthisis in four years,	179
Homes with a negative history,	321
Total,	1,000

GROUP A: CHILDREN UNDER ONE YEAR OF AGE.

Diagnosis.		*Physicial Examination.*	
Negative,	27	Negative,	28
Pretubercular,	1	Catarrhal,	7
Bronchitis,	6	Consolidation,	0
Miliary tuberculosis,	1		
Total,	35	Total,	35

Of these 33 only 25 were exposed.

GROUP B: CHILDREN FROM ONE TO FIVE YEARS OF AGE.

Diagnosis.		*Physical Examination.*	
Negative,	152	Negative,	174
Pretubercular,	12	Signs of consolidation,	39
Tubercular,	10	Catarrhal signs,	36
Bronchitis,	27		
Phthisis?	39		
Phthisis,	9		
	249		249

Of which 171 were exposed.

GROUP C: CHILDREN FROM FIVE TO FIFTEEN YEARS OF AGE.

Diagnosis.		*Physical Examination.*	
Negative,	326	Negative,	424
Pretubercular,	50	Signs of consolidation,	222
Tubercular,	49	Catarrhal,	70
Bronchitis,	43		
Phthisis?	210		
Phthisis,	38		
Total,	716	Total,	716

Of these 716 only 481 were exposed.

PHYSICAL EXAMINATION CONTINUED.

Throat:	Hypertrophied tonsils in	495
	Adenoids in	145
Heart:	Mitral regurgitation in	10
	Mitral stenosis in	2
Lungs, location of lesions:		
	Apical lesions in	262
	Lower and middle lobes affected,	100

TUBERCULIN.

Children with negative examinations:				
	Positive,	30	Negative,	43
Children suspected of tuberculosis:				
	Positive,	112	Negative,	66
Total of 251 cases, of which,				
	Positive,	142	Negative,	109

N. B. EXPLANATION OF OUR NOMENCLATURE.

Pretubercular: patients having tubercular symptoms with negative examination.

Tubercular: patients having tubercular symptoms and tuberculin reaction.

Phthisis?: patients having tubercular symptoms and signs of pulmonary consolidation.

Phthisis, patients having tubercular symptoms and signs associated with positive sputum or tuberculin reaction.

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CHRONIC INTESTINAL CATARRH.*

BY LESTER C. MILLER, M.D., WORCESTER, MASS.

In the commonly read textbooks on "Theory and Practice of Medicine" this subject is given scant notice. Under its various synonyms, chronic enteritis, chronic diarrhea, chronic jejunitis, chronic colitis, etc., very little is said, except to discuss the diarrheal condition as the chief feature of the disease. In special books on intestinal subjects the various manifestations of the disease, its association with other conditions, either etiological or secondary, are more carefully gone over. But it remained for some of the foreign investigators to study this condition by itself as well as in connection with diseases of other organs. These investigators have, so far as possible, worked out a symptom-complex for this condition and, so far as possible, attempted to treat the conditions on a more scientific physiological plan than has heretofore been done. The results of their work have so far been published only in monographs and given in lectures to students. Perhaps Professor Rosenheim, of Berlin, has studied the subject more carefully than any other man. He, at any rate, has most carefully outlined his methods of treatment and has, so far as possible, made his treatment conform to the clinical findings. It is to him that I am largely indebted for my present ideas concerning the diagnosis and treatment of chronic intestinal catarrh.

Dr. Cohnheim, a former pupil of Boas, and Rodari, a former pupil of Ewald, both treat the diagnosis and treatment from the same point of view as Rosenheim, but neither have had the large clinical experience of Rosenheim. Boas has contributed much to the diagnosis by his studies of feces, and to the treatment by the care with which he prescribes his diets.

From these writers and lecturers I shall quote freely without further reference to my authorities.

The several conditions which have been grouped under the one heading, Chronic Intestinal Catarrh, are very familiar to all general practitioners; especially in their more aggravated form they are a cause for worry, while the milder types are more or less of a nuisance according as they respond to treatment or only half get well.

The surgeon meets these conditions as accompaniments of gall-bladder diseases, of appendicitis, of peritonitis and chronic salpingitis; also often as more or less troublesome sequelæ to operations for these conditions.

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* Read at the March 11, 1908, meeting of the Worcester District Medical Society.

The neurologist often has occasion to decide whether a group of symptoms is due to an intestinal neurosis, which has all the earmarks of an intestinal catarrh, and whether he must consider the trouble only functional and not pathological.

It would be profitable without doubt to consider the etiology and pathology of the catarrhal processes I discuss to-day. But the time at my disposal is too short for all that can be said, and it seemed to me that both their etiology and pathology are too well-known to need any description by me.

Diagnosis. — There is no uniform disease picture. It may vary according to the location and extent of the process, according to the functioning ability of the intestines. This latter manifests itself by variations in the ability to assimilate nourishment, by fermentation and putrefaction and by the effects of the products of these processes on the functioning ability of the intestines. The picture varies finally according to the complications of the disease of the intestines with neighboring organs or secondary conditions which arise as a result of these complications.

The diagnosis must consider:

1. The character of the stomach contents, chiefly from its etiological bearing on the intestinal diseases, but no less important because of its influence on any dietetic treatment which may be attempted.
2. We must consider more carefully than any other points the location and extent of the catarrhal processes and the functioning ability of the intestines.
3. The usual complications, especially such as may be etiological.
4. The kind and severity of the secondary complications.

1. It seems hardly necessary to discuss the advisability of determining the condition of the stomach before we go very far in the examination of the intestines. Undoubtedly in many cases an improperly functioning stomach is the chief etiological factor in the intestinal catarrh. In other cases it may be only one of several factors which must be understood in order to intelligently manage our cases.

2. It would often be of great value to us if we could exactly locate and determine the extent of the catarrhal process in the intestines. In most cases we have to content ourselves with a more or less elastic classification, by dividing these cases into three groups: (*a*) small intestinal catarrhs; (*b*) diffuse intestinal catarrhs; and (*c*) colitises.

We ought always to be able to place the disease under one of these groups.

Small intestine. — Catarrh of the upper section of small intestine produces almost no influence on the feces nor on the frequency of defecation. The stools may be normal or there may be constipation; diarrhea is very unusual. The subjective symptoms are chiefly distention, peristaltic unrest, belching; also the passage of gas; occasionally, also, painful cramplike or drawing sensations located in the navel region or above it. The more widely the inflammatory process is extended over the small intestine, the more likely, as a rule, is diarrhea to occur. The functioning ability of the duodenum and upper section of the small intestine is interfered with, and poorly digested food masses irritate the large intestine and set up abnormally active peristalsis. As a result of this rapid movement of the intestinal contents we find some anomalies in the composition and in the appearance of the feces, which may be said to be characteristic of chronic intestinal catarrhs of this degree. Occasionally we find an acid reaction of the feces; they smell often of fatty acids and look clear brown and foamy (covered with bubbles or with bubbles throughout the mass); other times they are gold-yellow to greenish-brown, where the transformation of bilirubin into hydrobilirubin has been impossible on account of the rapid passage through the large intestine. Unchanged bile is sometimes demonstrated chemically, while particles of undigested food are easily found. These latter vary with the degree and location in the small intestines of the catarrhal process. In an extensive affection of the small intestine may be found large amounts of the muscle fibers, with sharp angles and well-defined striations when seen under the microscope; well-preserved starch granules which take the iodine test are seen in large amounts; fat refuse consisting of fat crystals, fat drops and fat in layers can be found. These findings are significant of an extensive small intestinal catarrh when accompanied by diarrhea. The mucus in the stool may be missed entirely by the unaided eye and often under the microscope. That mucus is probably always present is not doubted, but either it is too finely divided to be seen or it is dissolved and mixed with the feces. Between this very severe form and that first mentioned may be found all degrees, from watery, semi-solid, soft, pasty, to formed, constipated stools. It has seemed to me that the type most difficult to recognize and properly locate is more often that one accompanied by pasty stools, not more than one or two a day.

These cases complain more of subjective conditions, as distention, belching and considerable blowing up with gas an hour or two after eating. Such pain as they have is subacute and often supposed to be in the stomach; it is more often spoken of as a "distressed feeling." If they eat mixed foods, the stools usually look "ragged," are full of bubbles of gas, and there is often active fermentation going on. The amount of undigested starch and vegetable material in the feces is excessive and it is usually plainly to be seen that the carbohydrates of their diet are worse than wasted. These cases are often labeled, "intestinal dyspepsia" or told that they have intestinal indigestion.

It is proper to state here that a catarrh of the small intestine so extensive as to cause a persistent diarrhea has almost always extended to the cecum and ascending colon and so comes under our second class of diffuse intestinal catarrhs.

But the fact remains that the small intestinal part of it is the important part, both from the diagnostic and treatment points of view. When the cecum is affected we have additional subjective symptoms of distention in the right iliac region, frequent gurgling, sometimes pain, and probably with extension to the appendix we often have mild attacks of catarrhal appendicitis.

With the involvement of cecum and colon ascendens we get a soft stool, if not diarrhea, in all cases. Small particles of mucus are easily found, and these may be safe guides to the diagnosis of colon involvement with the small intestine.

This is the best place, perhaps, to speak more in detail of the examination of feces. In the first place, this is not such disagreeable work as may at first thought appear. If stools are to be examined macroscopically, it is best to have them free from water or urine if possible. If they are to be examined microscopically they can be put in a small jar like a Horlick's milk jar. A large spoon or one of the wire spoons used for beating eggs is a handy tool to use for transferring them from the vessel to the jar. A stiff spatula for hard stools, a mortar and pestle for mixing the feces with water or for the test for blood, a platinum wire loop, test tubes, cover glasses and slides and, as a handy aid, a white plate one half of which is painted black, — such reagents and the one or two stains needed are easily obtained.

My own method of examining feces macroscopically is to note the odor (foul, putrid, fat, acid or normal), color, consistency; then carefully the presence or absence of mucus, the presence of gas (either as bubbles on the surface or within the partly formed stools), blood or pus, particles of food or vegetable detritus, whether the feces are smooth and salvelike or granular when they are cut and smoothed out. For a more careful examination for mucus, a liquid stool or a solid stool mixed with water may be poured over the surface of the black-painted plate. Mucus-shreds or small pearl-like particles show as glassy masses against the black; they cannot be seen on a white surface, while blood shows up against the white part of the plate.

I have already spoken of the appearance of muscle fiber and starch in the feces in small intestinal indigestion with diarrhea. For the sake of brevity I have tabulated for frequent reference the chief findings in the feces and their significance.

Feces. — *Mucus*, pure, without any fecal matter, means catarrh of the rectum, sigmoid flexure and descending colon.

Solid balls covered with a layer of mucus means the same as the above.

Hyaline microscopic lumps of mucus found intimately mixed with solid or pultaceous solid stools, and no mucus to be seen with the naked eye, means *upper* and *no* involvement of the lower *large* intestine, or it may rarely mean catarrh of the small intestine.

Thin dejections with small shreds of mucus intimately mixed with feces, but seen with the naked eye, a more intimate mixture than in catarrh of rectum and descending colon, means *catarrh* of the whole large intestine.

Bile. — If a typical bile pigment reaction can be obtained in dejecta or some constituent of the stool, this positively indicates an affection of the small intestine. The higher up the intestine is involved, the more pronounced the reaction. Bile may be in the whole stool or attached to mucus, etc. Mucus is stained dark orange, ochre, greenish-yellow or green. Occasionally cylindrical epithelium or round cells are found impregnated with bile or droplets of fat intensely yellow. This coloration indicates they are derived from the small intestine. Small particles of mucus visible only by microscope are pathological; when bile-stained they are indicative of disease of the small intestine.

Muscle fiber. — Large quantities of muscular fiber indicate catarrhal involvement of the small intestine.

Connective tissue. — Quantities of connective tissue with few muscle fibers indicate a disturbance of the gastric digestion, for muscle fiber is chiefly digested in the intestine, while connective tissue is digested in the stomach.

Quantities of starchy material indicate involvement of small intestine. Fat is less important.

Bubbles on and intimately mixed with the feces indicate fermentation, usually carbohydrate.

Acid reaction also usually shows an involvement of the small intestine.

For practical purposes, without the aid of a microscope or any chemical analysis of the feces, we can settle several of the most important questions which arise concerning a catarrhal condition of the bowel. To illustrate, if we find mucus alone we know the colon is involved; if its expulsion is accompanied by tenesmus, the rectum or sigmoid flexure are the parts affected; if there is considerable mucus and feces mixed, then the upper or transverse colon is involved; usually if the feces are formed and covered or mixed with mucus, then the small intestine is not extensively involved. As already explained, the loose dejection, with marked acid odor, with remnants of food, greenish-brown with bile, indicates very active extensive catarrh of the small intestine. It is the cases which have only a moderately extensive catarrhal process in the small intestine that require the greatest care in the examination of feces. With these the microscopic examination is a necessity.

I have mentioned the chief features of both diffuse catarrh and also of the simple colitises. It remains to speak of the classical symptom of variations between diarrhea and constipation. In most of those cases the real underlying condition is constipation. The irritation of the long-retained feces congests the intestinal mucus membrane and mucus collects in sufficient amount to cause the so-called diarrhea. The oftener this is repeated the more diarrheal thecondition becomes. The most troublesome subjective symptoms occur in those cases in which the lower small intestine and cecum and ascending colon are involved; all sorts of uncomfortable feelings up to pain of a severe colicky character may exist.

Next to a careful examination of the feces, my own experience leads me to value highest the palpation of the abdomen. As this procedure precedes the feces examination, I have noted that the palpation gave a clue to the location and extent of the process which often made feces examination practically unnecessary. I believe that, with long practice and a careful consideration of findings in a large number of cases, palpation can be made to yield much more valuable assistance than we now credit to it. The tactile sensibility of the examiner can be developed to the same degree as the manual dexterity of the surgeon. With an increased ability to feel what is under his fingers, the examiner must develop a knowledge of what he is likely to feel. This means, of course, a regional knowledge of what is known to be normal and a pathological knowledge of what is possible. A definite method of examining the abdomen, which is consistently and persistently followed, is the only way to arrive even at a moderate degree of dexterity. It goes without saying that thick abdominal walls are as much hindrance to this sort of examination as to any other. The cecum is the most sensitive area in the abdomen, and it is often slightly sensitive to pressure even when normal. It is possible, however, to feel thickening of its walls and to fairly determine whether it is more sensitive than normal. The cecum is only very rarely found to contain solid feces and only in exceptional cases actually hard masses. On the other side, the sigmoid is often felt contracted on a hard mass of feces. The tendency to spasm in the lower third of the colon in colitis is often observed. It is often the cause of obstinate constipation. If a rectal examination is made, the upper third of the rectum is often found so firmly contracted as to admit the finger with difficulty. Like the cecum, inflammation in the sigmoid flexure is very persistent. The transverse colon is palpable and sensitive areas are easily made out; the two flexures are not so easily felt unless they contain impacted feces. It is not always possible to distinguish the colon from the lower border of the stomach, but frequent examinations with the stomach full and empty or distended with gas help to differentiate them. The small intestines are easily palpable; tenderness is apparent over the mesogastrium in small intestinal catarrh. The duodenum is a source of error, both for the surgeon and internalist. Its ulcers may be mistaken for gallstones or appendicitis and its catarrhal condition may appear to be in the stomach. Cancer of the duodenum is difficult to distinguish from cancer of the pylorus. Splashing sounds produced in the descending colon or a part of the transverse colon are abnormal and point to abnormally liquid contents and probable catarrh of the large and small intestines.

Palpation always should determine the presence or absence of tumors, hypertrophied liver, spleen, gall bladder, movable kidneys and pelvic tumors. Finally, if palpation is omitted as a routine measure in every case of stomach or abdominal disturbance whatever, then the diagnostician may be assured that some day he will be greatly chagrined by some findings of a fellow practitioner in a case he has neglected.

Percussion is of less value, and its findings are more or less the same as those of palpation.

Test meals of mixed foods are useful only to make more definite the sort of remains of digestion found in the feces.

Complications. — The most important complications of chronic intestinal catarrh are appendicitis (acute and chronic), catarrhal processes in the liver, which may accompany catarrh of the duodenum; we find swelling of the liver, diminution of its secretion and icterus, cholecystitis and cholelithiasis. Even if we cannot diagnose it we shall not go far wrong if in many cases we assume an inflammatory condition of the pancreas. Gout and rheumatism as also renal calculi are said to be complications due to faulty metabolism, the absorption of the products of faulty digestion, etc. The conditions in chronic intestinal catarrh are good for the establishment of intestinal tuberculosis if there is any pulmonary lesion.

My time is too limited to discuss the whole subject of intestinal neurosis. In many cases it is practically impossible to differentiate between neurosis and true pathological conditions. In most cases the symptoms are practically the same. Palpation may show more diffuse areas of hyperesthesia in the neurosis, or the feces may not be sufficiently bad for a neurosis. Generally we must combine all we can learn of the patient's general health, disposition, etc., and see if the evidence points most strongly to nervous or pathological conditions. Even then we need not be surprised if we are at fault. One thing is certain — a condition which begins as a true neurosis may in time develop a true intestinal catarrh. It is not often safe to ignore or scoff at the neurasthenics abdominal complaints.

Secondary conditions. — The greater the share of the small intestine in the catarrhal process, so much the more serious is the prognosis and so much the more severe are the subjective disturbances; also, so much the more severe are the secondary conditions. These are accompanied by a reduction in the whole nutrition of the body and by consequent anemia. The injury to the general nutrition is partly dependent on the abnormal conditions arising in the digestive tract, to the diminution of the amount of food taken, to badly digested food and to badly used food, to the formation of poisonous material or at least the disposition made of unappropriated intermediate metabolic products; finally, to changes in the nervous system dependent on the already mentioned conditions. These nervous changes show themselves through sleep disturbances, through increased excitability, through hysteria, hypochondria, sudden attacks of anxiety about one's self. The diseased portion of the intestine acts as a nervous generating zone and the intestinal affection shows itself with manifold nervous manifestations. Sometimes certain symptoms, although secondary, appear wholly in the foreground, as certain stomach disturbances and irritated conditions of the rectum, abnormalities of the heart's action, urogenital troubles, headaches, neuralgia in body and limbs. Anemia may be parallel with emaciation or it may exist alone. Anemia may vary from slight up to severe blood poverty of true pernicious anemia. In the minds of several investigators, pernicious anemia may be produced many times by certain conditions of the stomach, which causes a drying up of the gastric juice, and this with abnormal digestive conditions in the small intestine produces abnormal metabolic substances. Their absorption may be the cause of the blood changes, or perhaps, the necessary nutritive material cannot be absorbed through the diseased mucous membrane.

(To be continued.)

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ON CERTAIN EVIL TENDENCIES IN MEDICINE AND SURGERY.

BY MAURICE H. RICHARDSON, M.D.,
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(Concluded from No. 23, p. 756.)

The same question is certainly asked of every man who attends such patients in their later sufferings, when there is the most conspicuous inoperability. The conscientious surgeon cannot but wonder whether, after all, he might not at that early exploration have done something; whether he did not, as the saying is, " lie down " before the aggressor; whether, instead of a determined defender, he was not a " quitter " in the fight against overwhelming odds.

And who is to determine the matter of operability and inoperability, and how is he to educate himself for this vital task? Do we realize what the responsibilities of our position as attending physicians and operators are? In what other walk of life is it possible, in civilized countries, for a man to be advocate, judge, jury and executioner in matters of life and death, often on his own unaided responsibility?

The consultant in surgery, in the great majority of cases, decides finally questions of life and death, often under circumstances which make a calm and judicial decision difficult if not impossible. It is a brave man who, far from possible help, decides upon and performs an operation for a serious abdominal emergency — is it not? — with inadequate assistants and homely surroundings? But is it not a far more courageous man who advises against operation under such circumstances, at a time when exploration would be justified by overwhelming public and professional opinion, and palliation only by a very small minority?

I do not often feel the force of criticism against palliative measures, for in the greater number of surgical cases I believe in exploration after a reasonably accurate diagnosis. Whenever I do delay, something happens that seems to make that delay regrettable.

I once advised against operation in the case of a very stout lad who was at a preparatory school in New Hampshire. The parents were patients of a distinguished colleague in surgery in New York. There was pneumonia and appendicitis, a condition in which operation seemed to me so hazardous as to be out of the question. My reason for advising against operation was because of the complication and because of the well-known fact that appendicitis often spontaneously subsides. Unfortunately, in this case it did not subside and the boy died of a general peritonitis within a few days.

The first question that was asked me a week or two later, when I was dining with the New York friend, was, " Why didn't you operate on ——— ? " a question which, you may be sure, I had asked myself already a thousand times, but which I could not answer without a sense of doubt and regret. Had the boy recovered from his appendicitis and penumonia, I should undoubtedly have used the case as an argument against operation in appendicitis in the presence of serious pulmonary complications.

Recently the interrogative process has been reversed, when I have had occasion to ask, " Why didn't you advise operation sooner in that fatal case of appendicitis that you had, the account of which I saw in the newspapers? " You may be sure that there was a very good reason for delay in this case, as there was in mine. But I have no doubt that this surgeon has asked himself a thousand times this very question, and always with that sense of doubt and regret, which any physician or surgeon cannot but feel in case of disaster.

If these questions seem to any one easy to answer, and if the tendencies to operative treatment in doubtful cases seem to others good rather than evil, what will be said of my decision not to open the abdomen in the case of a boy of eleven, with a temperature of 103° and a pulse of 110; with a temperature that in the first four hours of delay rose to 105°; with abdominal symptoms of some doubt; with a white count of 20,000; with somewhat indistinct tenderness in the appendix; without distention or rigidity; with a few moist râles in the base of the right lung? Two days before this boy had complained of pain a little above the McBurney point, with soreness and vomiting. In the beginning the temperature was 102.6°. In this case there was so much doubt as to the diagnosis, for reasons which might be described as intuitive rather than rational, that I postponed operation. In the next two or three days the whole staff of the hospital on duty, medical and surgical, was concerned in this diagnosis and prognosis. The diagnosis varied between some acute cerebral, thoracic and abdominal infection, and there was a good deal of fear expressed lest some urgent operable infection was being overlooked. I was especially inclined to suspect an acute meningitis and called upon the neurologists. This possibility was never absolutely ruled out. Death of " croupous lobar pneumonia " took place in six days.

It seems to me that no greater calamity could have occurred in this case than a hasty operation based upon a superficial examination. And is it saying too much to say that a croupous pneumonia is so difficult of diagnosis that the diagnosis cannot be made with sufficient probability to avoid a worse than useless operation? True, in this particular instance, the recognition of the exact disease was difficult; but there was something about the case as a whole which to me was forbidding of operation, and the result showed the justification of the contra-indications. I do not know of any calamity in surgery so dreadful as a death following an operation which demonstrates not only the error of diagnosis, but the uselessness of operation; for the surgeon cannot but feel that the operation was the last straw and the immediate cause of death. On the other hand, I must admit that during the first two or three days when I was observing this case I felt keenly the possibility that I might be overlooking an abdominal infection which demanded operation. And when, in acute diseases, we are considering regret, not to say remorse, which is the harder to bear with philosophy, a death hastened by a useless operation or one which timely operation would have prevented? In this very case, should I have felt a greater responsibility for the boy's death, supposing I had operated, than I should if the trouble had really been a gangrenous appendicitis with general peritonitis and I had not operated?

I should have felt the responsibility greater in the former case, for the operation would have imposed a useless burden. And yet, in the latter case, I should have felt that I had not even tried to lighten, as I might easily have done, an unbearable load.

I repeat here, what experience has proved to me time and again, that in either case the surgeon's life is endurable, especially in communities in which acute abdominal diseases furnish the overwhelming majority of fatal cases, only when his conscience tells him he has done the very best that the circumstances permitted. To this end let him beware of jumping too quickly to conclusions in diagnosis and in prognosis.

There is a tendency quite prevalent among surgeons to make light of surgical operations. I cannot but regard this as an evil, for all surgical operations, no matter how apparently trivial, are attended by possible difficulties and dangers which should always be taken fully into account in discussing the *pros* and *cons* of surgical operation.

I do not intend at this time to discuss at length the importance of contra-indications in proposed surgical operations, and that evil tendency, so prevalent, which belittles them. In my experience and belief the *contra-indications* should always be weighed even more critically than the indications, and that chiefly on account of the inclination on the part of surgeons toward making light of surgical operations. Take any of the surgical procedures of minor importance and danger,— the repair of a lacerated cervix, for instance. I do not suppose that much attention is paid to the possible dangers of these operations, especially by the occasional operator and the general practitioner. But I have seen a patient die of hemorrhage after this operation, and I have myself had a patient almost at death's door from the same cause. That such a thing was possible had probably never occurred to the surgeon; it had never to me, or to the nurses, for in both cases the exsanguination was not discovered until in the one death ensued, and in the other the closest possible escape. And few probably take into account in this operation the possible wounding of a ureter. I have nevertheless known of that most serious complication, a complication difficult and dangerous of repair.

Take a more extensive and visible operative area, like that of the breast; who ever thinks to-day of considering seriously the danger of removing a tumor of the breast? Are there no dangers in the operation under modern conditions? They are slight, it is true, but they are ever present. I have known, after operations upon the breast, deaths from pyemia, abscess, uremia, pulmonary embolism, wounds of veins and of the pleura.

In abdominal surgery, however, the evils of an unguarded prognosis are chiefly seen. At the consultation just described in the boy with excessive temperature, with question between appendicitis and meningitis, several of the younger men, and, I regret to say, a considerable proportion of advanced surgical students, advocated exploration on the ground of safety. Some one had put it into their heads that there was practically so little danger in an exploratory laparotomy that that danger as a contra-indication was negligible. True, perhaps, in a healthy boy of twelve, without indication of more serious and obscure disease than a simple appendicitis; but how about a boy delirious, apathetic, with a sustained temperature of 106°, pulse 140 and respiration 40?

But in a question of diagnosis between nothing and some operable cause of trivial moment,— between dyspepsia and gallstones, for example; chronic appendicitis and membranous colitis; chronic appendicitis and oöphoritis, — is the danger of intervention, trivial as it may be, to be considered as of no weight at all?

In the persistent and obscure pains of the neurasthenic in whom all experience has shown the probable absence of organic lesions, is there to be no weight given to possible danger?

I admit, as all abdominal operators must, that the danger of the exploratory operation, in the ordinary individual, is slight, but that this danger is a negligible one I do not in the least admit. It is common experience, I believe, that misfortune in surgery comes when it is least expected and in patients in whom we can least afford to have it occur. The exploratory laparotomy in the comparatively well, for trivial and local lesions, has little risk; in patients reduced by serious and extensive disease it has grave dangers. Simple exploration upon the neurasthenic is attended by dangers that are trivial. Even when there is added an operation like appendectomy, oöphorectomy or ventral fixation, the dangers are slight. But they are there just the same, either in the accidents and complications of general anesthesia or in those of exposure of the peritoneum, in hemorrhage, in technical errors, in general constitutional complications or in sequelæ. I should have no difficulty in illustrating these things by death under anesthesia or as the result of it; death from unexpected and so-called inexplicable peritonitis; death from hemorrhage from wounds of intestine and other organs, from anuria and from other and rarer causes. Nor would it be difficult to recall serious operative and post-operative complications, — from the leaving of gauzes and instruments in the abdomen to the always-to-be-feared mental effects which may result in insanity and self-destruction.

Not that these dangers are great or even more than trivial. The trouble is that many of them are the result of human frailty, and through human frailty we may fall into them. Possible disasters cannot always be provided against; the most stupid and indefensible things will be done, even to amputating the wrong leg or removing the sound eye. These are the contingencies of the operative intervention, and their influence must be calculated and discounted by the wise physician. There is very little real danger in crossing the ocean in a modern steamer; but he is a foolish traveler who does not reckon upon the possibility that his steamer may be the latest addition to the list of " missing and never heard from."

I wish, in connection with contra-indications, to emphasize as strongly as I possibly can the fact that it is not always plain sailing at the operating-table. The most unexpected emergencies may arise, and these, even if provided against with care, and met with skill, may be quickly fatal. No two cases ever have been or ever will be just alike, and no man can bring to all that skill and experience essential to meet successfully a sudden and unexpected disaster. All operations, no matter how trivial, have in themselves possibilities of death when perhaps death can be averted by instant recognition and swift repair. How often are these facts considered in discussing the *pros* and *cons* of operative measures?

And there is a tendency, too, on the part of every physician, to look upon surgery with altogether too great fear and misgiving. In no other way can we account for those delays which to-day furnish the bulk of the mortality in surgery. This tendency, compared with that of the surgeon of making too light of his work, is, unfortunately, lethal in the extreme. It is to be accounted for, I think, rather by a too favorable prognosis than by a too-little-studied diagnosis, for it cannot be said of the physician, as I am sure it sometimes can of the surgeon, that he does not study his case and do his best to make a clinical diagnosis. It is rather, as I say, his too optimistic view of diseases as he follows them from beginning to end.

Take two common examples of errors in prognosis as we surgeons see them: appendicitis and breast tumors.

Appendicitis, when the patient gets to the hospital, is a disease which, as a rule, is conspicuous and not easily mistaken, for in most cases the physician has watched it long enough to become convinced of its seriousness. We see that things are going wrong. We surgeons do not know how many patients the physician may have watched successfully through an undoubted attack. We do not have the opportunity of seeing the favorable course which most cases of appendicitis spontaneously follow. Very few medical students, and practically no house surgeons, have a chance to see what will happen, under medical treatment, in a sharp attack of appendicitis. Every patient with appendicitis in my wards I find has been operated upon immediately, often in the night. Far be it from me to say that this is not the very best treatment. But, to explain the physician's tendency to too good a prognosis in appendicitis, we must remember that he sees the great majority of his cases get well under palliation. Then again, if he is of the ultra-conservative type, and sends to the surgeon only his very bad cases, he sees from surgery many fatal results. We may blame him if we wish, but that will not alter the fact that most of his cases, treated medically by himself, recover, whereas those treated by the surgeon die. Hence the reliance of many upon medical treatment and the tendency, dishearteningly evil, toward magnifying the dangers of operation and of imposing upon surgery the bad results really due to palliation and procrastination.

In breast tumors, more than in any other chronic surgical lesion, I see the horrors of the tendency to procrastinate. The tendency to delay in breast operations is always based upon a wrong diagnosis, for no physician to-day would for a moment admit that medical treatment is of any avail in cancer of the breast. The evil in the medical treatment of breast tumors results from error in diagnosis, and the error in diagnosis is because of the necessarily limited experience of the physician in these lesions. A surgeon has abundant experience, for he draws his patients from the whole community, state or country. He would indeed be a stupid observer in breast tumors if he should not acquire extraordinary skill in their diagnosis, when in every case it is controlled, confirmed or disproved by operation. It is not so with the physician. In breast tumors, and these remarks apply to all tumors, his diagnosis is frequently wrong and his prognosis, therefore, wrong. These errors are the result of a favorable experience, for he has seen many breast tumors come and go, and his experience is such that he cannot tell the common from the uncommon growths. I suppose nothing is more common in general practice than the woman nervous about breast cancer. We general surgeons see a few such cases coming to us on the patient's own initiative. We reassure the patient and that is the end of it. The physician sees hundreds of cases, all of which recover, save perhaps one or two. In the one or two the tumor does not cease from troubling and disappear; but while the physician is watching for this hoped-for outcome, it gains a headway and a malignancy which in far too many cases cannot be checked.

In the surgery of tumors wherever situated the evil results come from a too favorable prognosis based upon a wrong diagnosis or upon a negligence of possible complications when the diagnosis is right; or, whether right or wrong, upon a dread of operation and an exaggeration of its real dangers and ill consequences.

Many of these considerations provide a theme upon which a large and varied experience in surgery suggest many interesting comments; but I have, already, I fear, wearied your patience.

It is well, when one criticises, that he suggest improvement. In the preceding pages I have considered both sides of the question that I have discussed, and the discussion has, I think, borne with it the suggestion for improvement.

When I report, for example, an exploratory hysterotomy introduced by the surgeon with the words, "I have never seen this patient before; she is said to have a tumor of the uterus"; and when, instead of a uterine tumor a small ovarian cyst is found, and when, after the fundus is opened nothing more is found than a hyperplastic endometritis, the obvious suggestion in this report is that the *operator himself,* under his own study and examination, should decline, except in emergencies, to subject his patient to any sort of an operation except with the approval of his own conscience and understanding. And when one sees operations performed under conditions which seem to him of at least doubtful urgency, his suggestions cannot but lie in the direction of strengthening the indications for operation by at least overcoming the obvious contra-indications. When the surgeon can justify his exploration to his own conscience, in spite of a vigorous and determined opposition; when to his mind a careful weighing of indications heavily overbalances a still more careful weighing of contra-indications, then, and not till then, will the conscientious operator be satisfied, come what may as the result of his intervention.

And when time presses, as in all emergency work, let not the operator, upon the opinion of any one, delegate from himself the responsibility of decision, and let him not subject the patient to operation without at least a brief history and a hasty physical examination.

A colleague once operated for appendicitis upon a boy whom I sent to the hospital with that written diagnosis. The event showed a pneumonia with pleurisy and empyema, for which I operated myself. Recovery followed, but what was the mortification, especially on my part, for the wrong diagnosis which I had made!

Whether in acute or in chronic cases, especially abdominal, let the operator, as the last thing before his incision, no matter how clear the diagnosis, examine his patient under the relaxation of complete anesthesia. Many errors will be avoided if this rule is invariably followed. I was once sorry for Janeway because, as I thought, he had not made a correct diagnosis in a case which seemed to me clearly one of gallstones with distended gall bladder. I felt a certain disappointment that a diagnostician for whom I had learned to have the very highest respect and the deepest admiration could not tell the difference between a distended gall bladder and a renal tumor. The invariable habit of thorough examination under complete anesthesia, however, showed me at once that the disappointment that I felt should have been a personal chagrin, for Janeway was right and I wrong. Even without the aid of a general anesthetic his deductions had been unerring, for under anesthesia the tumor was unmistakably renal.

Finally, I would not place too much reliance upon the new and untried, as contrasted with the old and tried methods of diagnosis. I would cling to old-fashioned ways, elaborate histories, the educated eye, ear and touch. While using freely all modern methods of investigation, I should be unwilling to rest my prognosis upon newly-acquired laboratory methods when their results oppose, *in toto,* those of the physical examination. When the leucocytes are not increased I should not let that fact influence me against an operation for appendicitis called for by the local signs; and, as in the case of the boy with suspected meningitis, I should not let a white count of 20,000 lead me into opening an abdomen in which the local signs were insignificant. Nor would I accept without extreme doubt and reluctance a microscopic report of cancer when the history and local signs and gross appearances on section expressed to the experienced eye a contrary diagnosis; not, at least, until the most searching laboratory examination had been made. I have, for example, p otested against the microscopic diagnosis of cancer, when the history and every sign and symptom were, to me, both before and after removal of the tumor, against cancer, until the tumor was admitted to be benign (an encapsulated pharyngeal tumor at first pronounced by the pathologist to be carcinoma and finally admitted by him to be a supernumerary thyroid).

The tendency of recent years has been toward hasty and ill-considered diagnosis, based upon inadequate study of the cases; it has been, and now is, as the first resort, toward operative rather than bedside diagnosis. It is now toward belittling of contra-indications, especially the immediate danger of exploration and the remote discomforts and disabilities.

The remedy lies in thorough and persistent preparation for the practice of surgery (1) by careful preparatory study; (2) by abundant clinical experience; (3) by the cultivation of a calm, judicial temperament and the accurate weighing of evidence; (4) by the exercise on every possible occasion of "control" over diagnosis; (5) by the determination always to consider both sides of a question and (6) by assiduous preparation for the mechanical and technical steps of operative procedure.

For the physicians I do not regard myself as a competent critic, except perhaps as a judge of their virtues and their shortcomings in my own special work. I see in some exemplified to an extreme degree the studious, careful and successful diagnostician; in some, the same tendencies toward careless diagnoses; in others, the evils of false diagnoses in special lesions, with the often fatal reluctance to resort to mechanical treatment when that treatment is indispensable.

The remedies suggested for surgeons apply to physicians, except that to the latter the importance of indications for operation rather than contra-indications should be emphasized, for, however undesirable, in the abstract, surgery may be, its results as a whole are wonderfully good.

Clinical Department.

HYGIENIC ADJUSTABLE BATH DOUCHE HAMMOCK.

A New Method of Properly Administering a Vaginal Douche and a Rectal Enema.

BY G. L. HAGENBURGER, M.D., BOSTON.

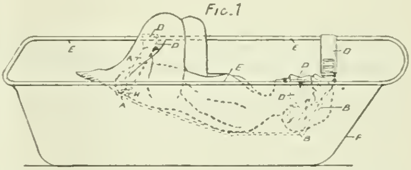
A. Few women know and few physicians sufficiently instruct their patients as to the proper position necessary to obtain the real benefit that is derived from hot water (plain or medicated either for hygienic purposes, such as cleansing and washing out, or for the depleting effect upon the uterus, tubes, ovaries or the pelvic organs in general when congested or inflamed. It is surprising upon investigation to see what a small number of physicians, so small I dare not fix the percentage, when they order a plain or medicated douche to their patients, understand the significance of their advice.

The patient returns home, fills the douche bag, lies down flat on the bed, couch or sits down in squatter fashion, which is worse, inserts the nozzle of the syringe, the fluid reaches the vulva or lower portion of the vagina, if nozzle is straight; if the same is slightly turned to one side the fluid is sent against the vaginal wall and escapes. The therapeutic effect upon the parts as intended is nil, because they are not and cannot be reached in this way. Congestion and inflammation goes on until surgical remedial measures are resorted to, which in many cases might be prevented. Why? Because the *modus operandi* is wrong, because the attendant has not taken into consideration the proper anatomical relations of the female genital organs when diseased.

The patient gets little or no benefit, becomes discouraged, gets the fluid on her clothing, bed, couch, floor; in fact, everywhere except in the vagina proper, where it will have some remedial effect upon the inflamed organs. Physicians condemn douches, not because hot water is ineffective on inflamed organs, but on account of the error in placing the patient in a proper position so that the water injected will not only come in direct contact with all the parts to be reached, but to remain there for some length of time, thus making a well out of the vagina, keeping a residual amount of fluid continuously surrounding and bathing the parts therein until the amount used for injection is exhausted from the bag.

For the past ten years I have instructed my patients to have a cover made, three quarters of the length of the bath tub, with a rubber or oilcloth pillow (stuffed with shavings or excelsior), this to be placed under the buttocks, which are raised, and the upper portion of the body lowered (Trendelenburg's position). The time spent in explaining this method to patients and physicians was well spent indeed considering the benefit my patients derived from that position in so douching and thus saving many a patient from the operating table. Now I have devised a hammock which attaches to any bath tub as per cut, upon which the patient lies with her hips lowering the upper portion of the body on an incline of 25°, thus drawing the abdominal contents towards the diaphragm, making a receptacle or reservoir of the vagina capable of holding an amount of water in reserve, continuously surrounding and bathing the cervix, and the vaginal walls, which, in my opinion, is the only proper method of doing what the douche is intended to do, viz., relieve engorgement and inflammation when existent in the pelvic organs.

Fig. 1

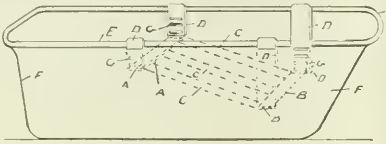


I have carried on experiment after experiment by placing small pieces of litmus paper, gauze, cotton or small pieces of permanganate of potassium in under the cervix and asked the patient to take a douche as she is in the habit of taking it, lying flat on a Kelly pad, only to find after the completion of the douche none of the above-mentioned articles in the returned fluid, but find them upon examination with the speculum where previously placed. By putting my patients in the proper position as above described and watching the return flow these substances are found therein instead of remaining upon the vaginal walls. The same holds good of vaginal secretions, benign or specific in character. In order to make any beneficial impressions upon inflamed organs it is necessary that the hot water must remain in a direct or indirect contact with these parts, not simply sent in and out. This cannot be done except the vagina is made to act as a reservoir which retains for the time being a residual amount of fluid. A sprinkling process merely will not answer. This device is simple, inexpensive and can be hung in any bath tub; no clothes, bedding, pillows or floors to get wet; the water drains off into the bath tub and, therefore, patients will use a larger amount of water and in the proper way where a douche is indicated.

B. The same hammock can be used for giving a high enema. It is a known fact that in order to wash out the entire lower bowel a high rectal tube must be inserted in the rectum by one experienced in doing it, a physician or nurse. If this is not done and the patient takes an enema by inserting the nozzle of the syringe into the rectum lying flat, after it bellows up the rectum, the water returns, bringing the feces below the sigmoid flexure with it, and that is all.

By placing the patient in this hammock, buttocks raised, body lowered, the rectum is sufficiently filled with water pressing upon the valve of the sigmoid, and by gravity passes over and into the ascending, transverse, and descending colon and cecum, thus washing out the entire large intestine as is accomplished only by a high enema. It is desirable after half the amount of the injected fluid is used up for the patient to turn slightly to the right, which facilitates the fluid flowing over the transverse colon into the cecum.

Fig. 2



Do away with the tube, especially in sigmoiditis or ulcerative conditions of the large bowel, where the passing of the tube is contra-indicated or painful, and where plain or medicated lavage is desired or indicated.

In case the patient is unable to leave the bed the hip strap of the hammock can be hung upon two stands, one on each side of the bed, the hips raised upon it and the douche or enema given without removing the patient to the bath tub.

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Medical Progress.

PROGRESS IN SURGERY.

BY JAMES G. MUMFORD, M.D., BOSTON.

(Concluded from No. 23, p. 763.)

ARTIFICIAL RESPIRATION AND OPERATIONS WITHIN THE THORAX.

In addition to these conclusions, Robinson made sundry other interesting reflections upon the problems we are discussing, — that one side of the human chest is often and safely opened without the use of any apparatus, while certain chest operations which prove fatal to the normal dog are almost invariably harmless in the case of human beings. This seeming paradox has frequently been explained, and the explanation rests on two facts — the mediastinal partition in dogs is little more than a fluttering membrane, which gives way readily to pressure, and operations upon the chest in human beings are usually conducted in the presence of extensive adhesions which fortify the normal partition.

Willy Meyer, speaking at this symposium, while recognizing the value of much of the positive pressure work which has been done, pointed out a fact which must appeal to every practical clinician — the fact that any positive pressure apparatus must interfere with the anesthetist's control of the patient's throat and jaws in the case of vomiting and collapse. Robinson meets this objection by placing promptly over the thoracic wound a perfectly fitting glass cup, and then removing the apparatus from the patient's face. Critics may retort that this maneuver may be troublesome and awkward in case of a serious anesthetic emergency.

Nathan W. Green and J. W. Draper Maury, of New York, followed Robinson with an interesting paper on the application of the positive pressure method to the surgery of the thoracic portion of the esophagus. Students of the literature will recall Green's article on the positive pressure method, published two years ago,[4] and the preliminary report by Green and Maury published last year.[5] In their present article they have little to add to their statements regarding methods of artificial respiration, but deal largely with the technic of esophageal resections, — a matter which is not especially pertinent to our discussion. Suffice it to say that Green continues to use, and apparently with satisfaction, a method of positive pressure. His present paper is based upon work performed in the surgical research laboratory of the College of Physicians and Surgeons. Both in this paper and in his previous writing, Green asserts his confidence in the apparatus of Brauer, or in the ingenious modification of it by F. T. Murphy.

Other experimenters affirm their satisfaction with a positive pressure method. H. H. Janeway, among them, tells of his using the box designed by F. T. Murphy.

In view of these encouraging and cogent statements of many investigators regarding *positive* pressure, it is interesting to turn to the reports and the work of E. F. Sauerbruch, of Marburg. It is now nearly five years since Sauerbruch,[6] at the German Surgical Congress, brought clearly to our notice the advantages of his *negative* pressure apparatus for artificial respiration. He agreed with most other observers in dwelling upon the dangers of pneumothorax, and described that form of apparatus which is now familiarly known as the "Sauerbruch Pneumatic Cabinet." Last June, in Chicago, Sauerbruch rehearsed the points in his well-known work and dwelt especially upon certain features of his investigation, stating that dissatisfaction with the theory of positive pressure, and the encouragement of Von Mikulicz, led him to experiment with negative pressure, basing his work on the known principles of the difference between the intrabronchial pressure and the pressure at the surface of the pleura — about 7 to 8 mm. of mercury — which serves to keep the lungs distended. Accordingly he has devised an airtight operating chamber or cabinet, in which operations are performed under diminished atmospheric pressure. To quote the description of Brewer[7]: "The cabinet is constrcted of metal and glass and is so arranged that the body of the patient lies upon a table within the cabinet, while the head protrudes through an opening in one side, guarded by a tightly fitting rubber collar or ring, which is snugly applied around the neck. The cabinet is sufficiently large to accommodate the operator and two or three assistants.

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[4] "The Positive Pressure Method of Artificial Respiration." Surg., Gynec. and Obstet., May, 1906.

[5] "Experimental Studies upon the Thoracic Esophagus: A Preliminary Report." Ann. Surg., October, 1907.

[6] Zentralbl. für Chir., 1904.

"Air is exhasted from the cabinet and a negative pressure produced by an electric suction-pump. The cabinet is amply lighted by electricity and contains a telephone by which communication can be held with outside assistants. . . . When the patient is placed on the table with the head protruding, the entire body below the waist is surrounded by a canvas-covered rubber sack, which communicates with the outside air by means of a straight tube, thus maintaining the ordinary atmospheric pressure on all parts except the thorax and arms. The anesthetic is administered by an outside assistant. When sufficient air is withdrawn to render the negative pressure equal to 10 or 12 mm. of mercury it is found that on opening both pleural cavities the lungs do not collapse but that respiration continues without the slightest embarrassment."

In such a simple apparatus, and later in a carefully constructed small operating-room, Sauerbruch has performed several intrathoracic operations upon the human subject, — resections of the lung and esophagus, and operations on the heart, — always without a resulting pneumothorax.

In regard to the Sauerbruch cabinet, W. Meyer observes: "The beauty of this cabinet is that it can be used for negative as well as positive pressure. If the operation with negative pressure is desired, the patient's head is placed outside of the cabinet and the body inside; if positive pressure is desired, the head is placed inside and the body outside. In either case the anesthetist has free access to the patient's head. If he is inside the cabinet and positive pressure is used, the excellent ventilation provided for will prevent his becoming anesthetized himself."

Sauerbruch now gives us definite rules of procedure which he has worked out through his experience with the negative pressure method: "So far as the anesthetic is concerned, it is remarkable how small a quantity is needed to produce complete anesthesia, and then only at the time of opening and closing the thoracic cavity. During the remaining steps of the operation very little of the anesthetic is required. It has been shown that it is unwise to reduce the pressure more than to 7 or 8 mm. of mercury, and Friedrich has had excellent results with a negative pressure of from 3 to 5 mm. In fact, such a minimum reduction should always be employed during intrathoracic operations on the esophagus or lungs, or when it becomes necessary to expose the mediastinum. Before concluding the operation, however, it is essential to *raise* the pressure to 7 or 8 mm. of mercury, so that the lungs may become fully expanded, filling the chest cavity completely."

Sauerbruch insists, as do all other investigators of this subject, upon the strictest aseptic care of the wound, for sepsis is extremely fatal to the victims of intrathoracic surgery. Absolute hemostasis is important, also.

Sauerbruch rehearses certain of his experiences in operations upon the human subject. His first operation in the pneumatic cabinet was for sarcoma of the ribs. No disturbance whatever followed a great opening of the thorax and a wide resection of the chest wall. Again, he removed an extensive cancer involving several ribs. There resulted so great a defect in the chest wall that a difficult plastic operation was needed for its closure, and the success was complete. Other operators in numerous cases have performed similar resections through the aid of the pneumatic cabinet, so that Sauerbruch remarks that in extensive breast cancer, involving the ribs and pleura, the dangers of resection are greatly lessened, "and the contra-indications to the employment of radical procedures are fewer than before, while involvement of the ribs, and pleura in mammary carcinoma, is no longer a contra-indication for operation." He dwells especially on the value of his method in the treatment of empyema: "It is important not to be content with the lessening of the size of the opening in the pleura through expansion of the lungs (the usual practice); the operation must be performed under pressure. The expansion of the lungs forces out the exudate and prevents pneumothorax, while (by the employment of negative pressure) shrinkage of the lungs with subsequent scar-formation is lessened considerably. *All recent empyemas and a considerable percentage of the chronic ones yield quickly without the formation of a fistula; the patient is spared tedious after-treatment and subsequent plastic procedures.*"

Sauerbruch performs the operation for empyema in the usual manner, with a negative pressure of 7 mm. He evacuates the chest of pus, and, leaving the wound open, applies an enormous gauze dressing without drainage so as to prevent the entrance of air into the pleural cavity. On the fifth day he changes the dressing, with the patient again in the cabinet. At the time of his second dressing he finds the lung usually adherent to the chest wall, so that thereafter, if subsequent dressings are needed, he does not employ the cabinet.

As we know, Sauerbruch has had excellent results in resections of the lung itself, and in the drainage of lung abscess. As he remarks, it is in the treatment of these conditions that lung surgery had its inception.

There are numerous advantages in the employment of differential pressure when operating on the lung, aside from the elimination of pneumothorax. The surgeon finds that the anatomical relationship of the parts is more apparent, while the diseased portion of the lung is brought easily into view, so that the lung itself may be sutured readily to the edges of the wound. After the abscess has been opened by the cautery, the negative pressure is found to be especially advantageous in that it prevents the aspiration of foreign material into the healthy parts of the organ. "The excess pressure in the bronchi prevents gravitation of fluids and forces every particle of free blood to the wound-surface, where air-bubbles are seen to burst, driving before them particles of blood and pus." Considerable hemorrhages, even, are forced to find their way outward instead of into the bronchi themselves. These cases, also, are most advantageously dressed under a differential pressure during convalescence, for such pressure always tends to remove blood and pus from the bronchi.

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[7] "Surgery of the Thorax." By George Emerson Brewer, in "Keen's Surgery," vol. iii, p. 560.

As for cases of bronchiectasis, the writer points out that an operation is indicated when the lesion is isolated in one lobe of the lung only. *This lobe must be resected.* In discussing further the condition of bronchiectasis and of malignant disease of the lung, Sauerbruch states that operative intervention in all cases should, if possible, consist invariably in the amputation of an entire lobe of the lung. In spite of this vigorous assertion, Sauerbruch points out this measure's unpopularity, and its danger, resulting from the difficulty of closing properly the stump of the amputated bronchus, — a common source of deep wound infection. He recommends the technic of Friedrich for the closure of this troublesome tube: Expose the bronchus as high as possible, free the surrounding vessels and clamp the bronchus with forceps protected by rubber tubing, then curette away the mucous membrane of the bronchus for 3 cm. at least above its opening. Tie tightly this attenuated bronchial end with the fair expectation that the raw surfaces of the lumen promptly will glue together. It is well to support this first ligature by a second heavy ligature placed above it upon the bronchus.

We learn that the cabinet has been found extremely useful in the treatment of intrathoracic injuries also, and for exploratory operations upon the chest. By the aid of the cabinet we may open the chest as freely as we open the abdomen, and we have seen how, under the influence of differential pressure, the lungs expand and force outside of the wound blood and other fluids and foreign material.

Sauerbruch remarks further that the use of the pneumatic cabinet has served to allay the fear of surgeons when forced to open the pleural cavity for lung injuries and he tells of operating under negative pressure successfully for rupture of the lung, while Kuettner has performed suture of the lung hilus successfully in two severe cases of injury. The writer says that it was for such cases as these he was impressed especially with the disasters which may follow pneumothorax, emphysema and sepsis. In the cases just quoted, "when the thoracic cavity was opened, the collapsed lung was seen to be resting on the distended mediastinum, but while we were watching, it began to expand, and at the same time the mediastinal emphysema gradually disappeared. The two layers of the pleura again were in contact, and the heart action became normal after the air pressure was removed."

Sauerbruch, as well as most other experimenters in this field, has given no little attention to operations upon the thoracic portion of the esophagus — especially to resections of the esophagus. This operation — resection of the esophagus for malignant disease — has proven to be the most difficult undertaking of all the operations within the thorax so far reported, whether on animals or on human beings. As yet no successful resection of the esophagus under artificial respiration with the saving of life has been accomplished, and although cancer of the cardiac esophagus is known to be a disease of slow extension, we cannot be satisfied that its excision is to be made practicable and safe.

Such are the results and the observations, briefly recorded, of the speakers at Chicago, and these results represent probably the best work being done in the field of intrathoracic surgery. It is not altogether easy as yet to conclude whether the negative or the positive principle is the better. Indeed it may well be that both principles must be employed under varying circumstances. If this be true, one may well think with Meyer that the Sauerbruch cabinet, which permits of either form of pressure, should be the apparatus of choice. So far as the results in general surgery go, the showing of the negative pressure advocated is much the more striking. These results have demonstrated beyond question the practicability of the cabinet for human surgery and in a considerable variety of most serious cases. On the other hand, the advocates of positive pressure are able as yet to report extremely few results of their operations on human beings. Their work has been experimental and has been confined mainly to laboratory operations upon animals.

Until a more simple and inexpensive device for lung inflation than the pneumatic cabinet has been developed, it seems that every responsible hospital should be equipped with the new modified apparatus of Sauerbruch.

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Reports of Societies.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

THE THIRTY-FOURTH ANNUAL MEETING WAS HELD AT LOUISVILLE, KY., OCT. 13, 14 AND 15, 1908, with the President, DR. ARTHUR R. ELLIOTT, of Chicago, in the chair.

(Concluded from No. 23, p. 767.)

WHEN SHOULD THE PROSTATE GLAND BE REMOVED?

DR. E. O. SMITH, of Cincinnati, said that this question preceded and superseded that of the choice of kind of operation. Each case should be considered separately and individually. It must be determined that the prostate was the cause of the trouble, and, if removed, would the patient be in better condition afterwards. Hypertrophy of the prostate must not be confounded with contracture of the neck of the bladder, nor with vesical calculus. Palliative treatment should not be persisted in too long. If symptoms were growing worse in spite of treatment, one should operate. Most patients were advanced in life and were not choice subjects for operation. Acute retention seldom called for immediate operation. The frequency of cancerous degeneration of the prostate gland argued for early removal. Ultimate results must be borne in mind when giving to the patient the prognosis of his case.

FRACTURE OF THE ASTRAGALUS WITH DISLOCATION OF THE FRAGMENTS.

Dr. J. H. Stealy, of Freeport, Ill., reviewed the literature and reported two interesting cases that had come under his observation and on which he operated.

Conclusions: "1. Where an injury to the ankle-joint has been sustained, producing great pain and swelling, the diagnosis should be made. 2. Do not expect to make a correct diagnosis of the injuries of the astragalus without calling into service the x-ray with radiographs of the parts. 3. Do not make a diagnosis and attempt reduction of the astragaloid fractures without dislocation before a radiograph has been taken, nor without an anesthetic. 4. Consider the manner in which the injury is received. 5. Remember that reduction of a dislocated fragment is almost always impossible. 6. Do not make yourself believe that these conditions will in time correct themselves, and the patient will come out with a functionally good ankle-joint. 7. Remember that the dislocated fragment is liable to necrosis. 8. Destructive inflammation with suppuration may follow. 9. Generally, as soon as expedient, after a correct diagnosis has been made, the dislocated fragment should be extirpated. 10. Operation should be done through one incision, expeditiously, and without destroying important tissues, as nerves, tendons, arteries, thus giving a far more useful member than if left to nature."

SYPHILITIC CRISES SIMULATING SURGICAL EMERGENCIES.

Dr. Maynard A. Austin, of Anderson, Ind., said that in the larger medical centers syphilis exhibited itself in its protean forms so frequently that its recognition and diagnosis were matters of frequent therapeutic reference. It was not an infrequent occurrence in the surgical clinic of the late Dr. Nicholas Senn to have supposed surgical cases sent home with a prescription for the iodides, with the result that on their return a few months later the supposed surgical condition had entirely disappeared. The external evidence of this disease most frequently resembled the slowly growing tumors, especially of bone, but these should give little trouble in their diagnosis. The abdominal crises might simulate a number of organic diseases.

The author reported three cases, one of which simulated gallstones; another, renal colic, and a third, an obstruction of the bowel. All these cases were referred to him as a consultant for surgical interference and all improved rapidly under specific treatment.

It was surprising that the various manifestations of syphilitic disease of the spinal cord should be so frequently overlooked. Syphilis was not a rare disease in any community and one should not be surprised at its appearance in the most respectable families. Eighty per cent of the cases were said to result from innocent inoculations. The history which a patient gave was very unsatisfactory in many cases and a disrespect which many patients showed in regarding the disease as a simple matter was something which physicians should be able to combat more effectively.

Medical Section.

DIFFERENTIATION OF OFT-RECURRING GASTRIC SYMPTOMS FROM GALLSTONE AND OTHER VISCERAL PAINS.

Dr. Nathan Rosewater, of Cleveland, Ohio, said that nearly all pains of the digestive organs occurred during functional activity, while those due to gallstones, visceral and other causes were independent of the digestive periods. By giving nutritive enemata for periods of one, two or more weeks we could put the digestive functions of the stomach and duodenum at rest for so long a period that such pains as would occur during this resting period could scarcely be attributed to gastroduodenal function, but rather to independent causes. In this way the digestive function was eliminated entirely from consideration by this gastric rest test.

SYSTEMIC EFFECTS OF CHRONIC INFECTIONS OF THE THROAT AND NOSE.

Dr. F. Gurney Stubbs, of Chicago, said that in view of the fact that so many systemic diseases were infectious in origin, the atrium of infection assumed a large place in prophylactic and hygienic treatment of the same. The nose and throat, due to their peculiar anatomical location at the beginning of the alimentary and respiratory tracts, and to diverticula such as the sinuses, tonsillar crypts, etc., offered a large field for local and general infection. While bacteria penetrated the intact mucous membranes, those chronically inflamed offered slight resistance. In the nose it was less the direct absorption of bacteria and toxins than that the discharges carried them downward into the respiratory and alimentary tracts. Pure cultures of pneumonococci, streptococci and meningococci had been obtained in suppurative sinus discharges. The tonsils and adenoids offered a large percentage of systemic effects, particularly tuberculosis and acute articular rheumatism. The relation of chronic tonsillitis and rheumatism was discussed and attention drawn to the tonsil as a factor in being the atrium even for arthritis deformans, rheumatoid arthritis and the like.

SOME EXPERIENCES WITH AUTOGENOUS BACTERIAL VACCINES.

Dr. Oscar Berghausen, of Cincinnati, said that bacterial injections were of distinct therapeutic value. In most cases the improvement was a gradual one, although marked at the very start. As in all branches of therapeutics, negative as well as positive results would be obtained. He who wished results should follow the methods of Wright, including a careful bacteriological analysis in each case, the preparation of an autogenous vaccine in most cases and a careful consideration of the clinical symptoms. The opsonic index, although it might only register one phase of immunity, could be of distinct value, especially in mixed infections.

THE CAUSE OF FAILURE IN THE TREATMENT OF TUBERCULOSIS.

Dr. F. M. Pottenger, Monrovia, Cal., gave a careful analysis of several hundred clinical histories of tuberculous patients, showing that the cause of the mortality in tuberculosis from a clinical standpoint was due to (1) an apparent failure on the part of both medical men and laymen to appreciate the fact that tuberculosis was curable, and an especial failure to appreciate the comparative ease with which the early cases were cured. (2) A failure on the part of both medical men and laymen to appreciate and recognize the signs and symptoms which accompanied early tuberculosis. (3) A failure on the part of both medical men and laymen to appreciate the necessity of prompt, energetic, intelligent treatment as soon as the diagnosis could be made. With the great mass of clinical evidence at hand, and especially the reports of sanatoria, which showed many thousand people who had suffered from tuberculosis who have regained their health, and with the post-mortem evidence which showed healed lesions in so large a proportion of subjects, there should be no excuse for physicians doubting its curability.

The proper time for treating tuberculosis was as soon as the diagnosis could be made.

A carefully taken clinical history would usually give information of such value as to render the presence or absence of tuberculosis probable, and upon the knowledge so obtained the physician could base his further action. If the history furnished positive information, then other methods of clinching the diagnosis should be resorted to at once.

The tuberculin test was a safe procedure in the hands of careful men and need not be feared. Tuberculosis must always be considered a serious disease. Delay in its treatment was always attended with risk. What was needed was a better appreciation of the early signs of the disease, a better understanding of the principles underlying its cure and a determination on the part of both layman and physician to apply appropriate remedial measures as soon as the disease was discovered. Early recognition with immediate intelligent treatment were the essentials to success. They had taken away the fear in appendicitis and diphtheria; they would also do the same in tuberculosis.

MEDIASTINAL SARCOMA WITH SPECIAL REFERENCE TO DIFFERENTIAL DIAGNOSIS.

Dr. Robert H. Babcock, of Chicago, reported a case not because of the difficulty attending the diagnosis, but because it was mistaken for either pulmonary tuberculosis or pulmonary syphilis. The patient was a young man, twenty-seven years of age, who, when seen, was suffering from orthopnea, anasarca and slight cough, with scanty mucous sputum. Inquiry into the personal history disclosed the fact that chancre had been contracted three years before and had led to the use internally of mercury in such doses that its physiological effects were produced nine months prior to the author's visit. These symptoms had been mistaken for the secondary manifestations of lues and they, together with the discovery by x-ray of a shadow at the right of the sternum, had seemed to confirm the supposition that the pressure symptoms subsequently developed were due to gumma in the right lung. Physical examination, however, revealed unmistakable signs of intrathoracic pressure with displacement of the heart, rightsided hydrothorax and anasarca. Enlarged cervical and axillary lymph nodes were also detected. The subjective and objective symptoms were so plainly unlike those of consumption of the lung or of gumma of that organ that he had no hesitation in diagnosing a tumor, probably sarcoma of the mediastinum. A subsequent post-mortem examination established the correctness of the *intra-vitam* diagnosis.

MULTIPLE SEROSITIS.

Dr. Walter L. Bierring, of Iowa City, Ia., said that the diagnosis of this condition was somewhat dependent on the history of a previous attack of acute pericarditis, pleuritis or perihepatitis; to the early appearance and subsequent disappearance of the edema of the legs; to the marked ascites; to the enlarged liver; to the absence and very late involvement of the spleen; attacks or pain, tenderness and rigidity in the right hypochondrium; to the rapid recurrence of the ascites; to the signs of pleural exudate and to the physical signs of adherent pericardium, without which the disease was incapable of diagnosis.

The differential diagnosis must consider a cirrhosis of the liver, a chronic tubercular peritonitis and in older subjects a carcinoma of the peritoneum, and reliance placed on the before-mentioned symptoms and adherent pericardium, by the slow, insidious, protracted and intermittent course of the disease; by the association of an enlarged, smooth and firm liver, with marked ascites, and by the fact that in many cases the patient survived a large number of tappings.

Pneumonia, pleurisy, endocarditis, general septic conditions and the like were also mentioned as having their sources often from the nasopharynx.

The value of attention to the nose and throat in all systemic infective diseases was shown and that full nasal function should be maintained and affected tonsils and adenoids removed both as a prophylactic and as a curative measure.

EXPERT TESTIMONY AND THE MEDICAL WITNESS.

Dr. Leo M. Crafts, of Minneapolis, spoke of the character and essential qualifications of the medical witness in court, his duties and his relation to the court, the patient and to himself, as well as his manner, the sacredness of his oath, the full truth and nothing but the truth, the present disgraceful state of expert testimony, and said that the fault lay largely with the attorneys themselves, who wanted only such statements as would help their cases.

He then discussed the conscious or unconscious prejudice of the witness and the power of various nefarious influences. There was necessity for a complete change in the methods in use of expert testimony. The one great function of the medical man in court should be a clear, uncontrolled presentation of full and exact scientific facts and opinions regardless of who it would help or hurt.

HYSTERICAL AND NEURASTHENIC CONDITIONS FOLLOWING ACCIDENTS.

Dr. B. F. Turner, of Memphis, after reporting illustrative cases, summarized as follows: 1. That a plaintiff in an action for damages following an accident need not necessarily be considered as perpetrating a fraud because physical disability cannot be proven. 2. That to assume the grave responsibility of an expert witness demands extraordinary skill, knowledge and experience, as well as a finely adjusted judicial temperament. 3. That it is no part of the office of the medical expert witness to support either side of the case. 4. That rather than to run the risk of appearing ridiculous in the eyes of his fellow practitioners, the conscientious physician will decline an attractive fee and refuse to appear in a rôle for which his daily walk and well-established reputation appears to fit him but poorly.

CEREBRAL RHEUMATISM.

Dr. Herman H. Hoppe, of Cincinnati, said there was little mention of this subject in textbooks. Under this title acute chorea, non-purulent encephalitis and purulent meningitis were not included. He reported a typical case. The onset was one of restlessness, delirium, delusions and hallucinations during the second week of acute articular rheumatism; pulse high, temperature 101–2. On the third or fourth day the patient rapidly passed into a state of coma; face pale, cyanotic; pupils dilated; respirations 60 to 72 per minute, very shallow; pulse 160; temperature 105–110; incontinence of urine and feces; exaggerated reflexes; profuse general perspiration. Either the patient died or after six to eight hours the coma gradually disappeared; pulse, temperature and respirations fell. The delirium, delusions and hallucinations continued for two to three days longer and then faded away. The patient made a complete recovery.

The author discussed the etiology, pathology and differential diagnosis of this syndrome. Salicylic acid intoxication and hyperpyrexia were considered and dropped. Cerebral toxemia, with a probable serous meningitis, were looked upon as the etiological and pathological causes. Delirium tremens must be ruled out, for a mistaken diagnosis and a sedative treatment would end fatally. The prognosis was bad, in that over 50% of the patients died. The treatment was iodides, salicylates and cold baths.

QUESTION OF LEGAL RESPONSIBILITY.

Dr. Albert E. Sterne, of Indianapolis, laid stress on the necessity for more careful examination and observation of persons accused of criminal acts and for whom the plea of insanity was advanced. He took the ground that insanity once established was a clear basis for irresponsibility in a legal sense, but at the same time he emphasized the necessity for not permitting criminals who had been declared to be of unsound mind to be set at liberty. He denied the psychiatric entity of so-called moral insanity in the so-called temporary emotional state, and he would deny them altogether the protection of law and medicine. At the same time he pointed out that morbid tendencies and perversions associated with other evidences of mental unsoundness clearly established insanity and were symptoms of well-defined psychosis. The existence of a mere delusion unaccompanied by other signs of mental impairment did not establish insanity; but, on the other hand, the existence of a delusion even of a single variety associated with definite signs of mental and physical defect was a sufficient basis for such a plea.

MENTAL RESPONSIBILITY.

Dr. Charles W. Hitchcock, of Detroit, said that the inquiry presupposed probable impairment of mental integrity, and this rendered difficult the problem of exact justice. He discussed responsibility both in the sense of legal liability and on ethical grounds of rightful liability. He cited a case which suggested the questions of rightful responsibility, — whether the insane were necessarily irresponsible, especially in the presence of a proved delusion, or whether, on ethical grounds, some degree of responsibility might not even attach to the insane in certain conditions. This case was one of wife murder. A fixed delusion led up to the fatal quarrel. The nature of the act was appreciated and adequate provocation was lacking. It was very questionable whether the powers of self-control were so impaired that he could not have resisted the impulse to harm. There was a well-known aversion to holding a deluded mind to any accountability. Mawkish sentimentality was to be guarded against. The Thaw case was a warning of the dangers of this line of defense. The medical profession should be extremely cautious here and study suspected cases with great care.

He discussed some of the tests. Ethically the inquiry should go beyond mere proof of insanity and ask not only whether the nature of the act was appreciated, but whether inhibitory power was sufficient to restrain.

He next discussed the attitude of several states toward the question of mental responsibility, as shown in their statutes and decisions. The ordinary jury was hardly competent to pass on such questions.

A NEW FIELD OF PRACTICE IN SPIRIT AND DRUG NEUROSIS.

Dr. T. D. Crothers, of Hartford, Conn., said the number of persons diseased and suffering from the use of spirits and drugs was increasing, and the physician, who, of all others, should advise and treat such cases, practically ignored the whole subject; hence the field was occupied by laymen, reformers with moral remedies and quacks with specifics.

The profession everywhere recognized the intensity and magnitude of the subject, but the medical colleges gave no instructions to the students, and the physical side of the problem was thought to be mere theory, and hence little or no effort was given to the scientific study. All the intense efforts by laymen and reformers to check this evil was a sad reflection on the stupidity and ignorance of the profession, who should be the leaders and teachers of a great physical and sanitary evil that was as thoroughly preventable and curable as consumption or typhoid fever.

Illustrative cases were given showing what intelligent recognition and application of remedies to this evil would do. No great progress would be made in diminishing this scourge to civilization until it was treated medically, and the victims considered diseased and neurotic.

THE HUMAN ELEMENT IN MEDICINE.

Dr. Philip Zenner, of Cincinnati, Ohio, said that as practitioners we were prone to overlook the human element in diseases. We not only overlooked the characteristics of the patient, his special physiological or pathological reactions, but we were apt to forget that great factor in health and disease, — his mental attitudes and aptitudes. A powerful therapeutic agency was the mode of examination of the patient. The physician might harm his patient by neglect or delay in telling him the result of the examination of the urine; for instance, the idea arising in the patient's mind that he had serious diseases, of which his physician was unwilling to speak. The human element figured materially in diagnosis and prognosis. The mental element frequently played a large or controlling part in the case. He urged that each physician take an inventory of his cases and by careful study or treatment test the question, what of present suffering was due to the mode of examination, the diagnosis or prognosis given or the treatment instituted, and how much could be gained by remedying any harm thus done, or by well-directed suggestions or by a heart-to-heart talk with the patient as to what his mind had done, and might do, in the way of mental and physical health.

SOME OBJECT LESSONS IN OTOLOGY FOR THE GENERAL PRACTITIONER.

Drs. J. A. Stucky and S. B. Marks, of Lexington, Ky., had endeavored to impress the general practitioner with the need of a careful and routine examination of the ears of children in all febrile conditions, especially in the acute exanthemata, as well as meeting such conditions when arising. To accomplish this the medical schools should offer a better course of instruction in the diseases of the throat and ear. Some had met the occasion, while others had not.

The frequency of certain nasopharyngeal conditions, notably the adenoids, as causal factors in middle-ear disease and their complications should bring from every general practitioner his hearty co-operation and insistence on the removal of these factors. That a free myringotomy be done in cases of earache after pain had persisted for a few hours, with no relief from local and general measures, whether there be fluid in the middle ear or changes in the drum membrane, was advised as it relieved the pain and rendered further trouble much less likely. Then a search must be made for the cause of such trouble, with its early removal.

The value of a microscopic examination of every aural discharge could not be overestimated, since the different organisms causing middle-ear suppuration and consequent mastoiditis differed so in their virulence. So was the differential leucocyte count of value just as it was in abdominal conditions.

Every case where mastoid tenderness had been or was present should be carefully watched because of the treacherousness of the symptoms of this disease; the disappearance of pain and restlessness meant the same thing in mastoiditis as in appendicitis, — a relief of local pressure, — the pus escaping externally or internally, so that one must be ever on his guard for intracranial complications. One should never make the mistake of waiting for the so-called classical symptoms in mastoid disease, but advocate early operation, thereby conserving the patient, as less anesthesia was required, there was less shock, the middle ear was frequently saved and complications avoided. Chronic middle-ears should always be considered dangerous and should receive careful attention and operative treatment if necrosis was present. The importance of the treatment of the constitutional phase of every ear case, no matter how mild, was strongly emphasized, especially so in regard to the intestinal tract.

The following papers were likewise read: "Feeding and the Use of Alcohol in Typhoid Fever," by Dr. J. H. Landis, Cincinnati, Ohio; "Hyperchlorhydria and its Treatment, Based on Animal Experimentation," by Dr. M. Milton Portis, Chicago; "Pernicious Anemia," by Dr. J. A. Witherspoon, Nashville, Tenn.; "Causation and Treatment of Infantile Convulsions," by Dr. E. W. Saunders, St. Louis, Mo.; "Observations on the Liver in Five Hundred Cases of Gastro-intestinal Diseases," by Dr. M. H. Mack, Chicago; "Nervous Children," by Dr. I. A. Abt, Chicago; "Consideration of Certain Factors in the Production of Pulmonary Edema," by Dr. Joseph L. Miller, Chicago; "The Treatment of Sciatica by Means of Deep Perineural Infiltrating Injections of Salt Solution," by Dr. D'Orsay Hecht, Chicago; "An Interesting Case of Pulmonary Tuberculosis," by Dr. S. G. Bonney, Denver; "The Problem of Relapses after Apparent Cure in Cases of Pulmonary Tuberculosis," by Dr. Charles L. Minor, Asheville, N. C.; "Early Treatment of Squint," by Dr. George F. Suker, Chicago; "Clinical Facts speaking for the Identity of the Pneumococcus and Meningococcus," by Dr. Robert B. Preble, Chicago; "Improved Methods for Preparation of Glycerine Jelly for Macroscopic Specimens," by Dr. George I. Hogue, Milwaukee, Wis.

OFFICERS.

The following officers were elected for the ensuing year: President, Dr. John A. Witherspoon, Nashville, Tenn.; First Vice-President, Dr. Louis Frank, Louisville, Ky.; Second Vice-President, Dr. Albert E. Sterne, Indianapolis, Ind.; Secretary, Dr. Henry Enos Tuley, Louisville, Ky.; Treasurer, Dr. S. C. Stanton, Chicago, Ill.

St. Louis, Mo., was selected as the next place of meeting; time, October, 1909.

Book Reviews.

A Manual of Diseases of the Nose and Throat. By Cornelius Godfrey Coakley, A.M., M.D., Professor of Laryngology in the University and Bellevue Hospital Medical College, New York, etc. Fourth edition, revised and enlarged. New York and Philadelphia: Lea & Febiger. 1908.

The fourth edition of this useful manual contains several short additions, especially to the chapters on deviations of the septum and diseases of the accessory sinuses. The general interest in a few other subjects, as, for example, tonsillar surgery and direct inspection, would have warranted a fuller treatment. As in its previous editions, this textbook has the advantages and disadvantages of small size and condensation, with the merit of being clear and well written.

Obstetric and Gynecologic Nursing. By Edward P. Davis, A.M., M.D., Professor of Obstetrics in the Jefferson Medical College, Philadelphia, etc. Third edition, thoroughly revised. Philadelphia and London: W. B. Saunders Company. 1908.

The author has given a clearly written exposition of what a nurse must know to manage an obstetrical case intelligently. The arrangement of the book is excellent and the author shows the nurse where her responsibilities lie, and what her limitations are. Treatment of the many conditions Dr. Davis has wisely omitted, giving the nurse only the necessary outlines for handling an emergency without the physician.

Part II covers the essentials of gynecologic nursing in the same concise style that the first part covers obstetric nursing. It is a book to be recommended to nurses as one of the best on these branches of nursing.

Obstetrics for Nurses. By Joseph B. DeLee, M.D., Professor of Obstetrics in the Northwestern University Medical School, Chicago. Third revised edition. 12mo. Pp., 512, fully illustrated. Philadelphia and London: W. B. Saunders Company. 1908.

An excellent book, better it seems to the reviewer for the medical student than for the average nurse. Several of the chapters, especially the ones on "Obstetric Complications," "Premature Infants" and "Infant Feeding," could be materially shortened and their value much increased. As an example of book-making, aside from the weight of the volume, there can be no criticism. The illustrations are many and well done and add much to the text. It certainly is a book to be recommended to medical students and to the more advanced and intelligent nurses.

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MASSACHUSETTS STATE BOARD OF HEALTH BROCHURE ON THE PREVENTION OF THE SPREAD OF TUBERCULOSIS.

The brochure, "On the Prevention of the Spread of Tuberculosis," just issued by the Massachusetts State Board of Health, is a unique addition to the literature of the subject. It is clear and concise, simple enough to be understood by young people, sane and temperate, excellent in arrangement and exceedingly practical, being especially adapted to the needs of Massachusetts.

After an explanatory statement that the prevalence of tuberculosis can be diminished by knowledge on the part of the people of the nature of the disease and a general application of the principles underlying its prevention and cure, mention is made of the ways in which the germs which spread tuberculosis gain entrance to the body, and an illustration is given to show the importance of keeping young children away from persons ill with tuberculosis of the lungs.

The subject-matter is divided into two main parts, public health and personal health and habits. Under public health are considered (1) how the state protects the individual and what individuals should do to protect each other; (2) how heads of families and householders may prevent members of the household from taking the disease; (3) how the individual patient may prevent members of his family and other persons from taking tuberculosis; and (4) how employers may guard the health of their employees. Under personal health and habits are given suggestions (1) to patients; and (2) to the public. As much emphasis is laid upon the duties of individuals in protecting each other as upon those of the state in protecting the individual. While, for example, it is the business of a state inspector of health to enforce certain laws relative to the sanitation and ventilation of factories and to detect, if possible, any minor ill with tuberculosis, it is pointed out that private individuals, physicians, social service workers and organizations of various kinds may be of great assistance by calling to the attention of a state inspector of health any known unsanitary conditions or persons working in factories who show signs of tuberculosis; and the public is informed how, by dealing with the state inspectors of health, who are physicians, patients who have been uncared for or neglected may receive the best possible care.

In the same way, the state of Massachusetts has provided for the medical inspection of school children by school physicians, and for the sanitary inspection of schoolhouses by state inspectors of health, but any person has the opportunity of bringing to the notice of the state inspector of health in whose district the schoolhouse is located any ill-ventilated or overcrowded schoolhouse or the name of any child known to be attending school who shows signs of being ill with a contagious disease.

Householders and physicians are reminded of their duties of notifying the local health authorities in case a person in a family is sick with tuberculosis, and the local health authorities in turn are requested to notify the State Board of Health, without delay, giving the name and the location of the patient.

In the interest of public health the State Board of Health is inspecting dairies and slaughterhouses. One especial object of the dairy inspection is to exclude milk from public sale which comes from tuberculous cows, because tuberculosis is occasionally transmitted by cow's milk to human beings. It is explained that the occasional infection coming from milk leads to swelling of the glands of the neck and to abdominal tuberculosis, but not to tuberculosis of the lungs.

Brief mention is made of the Massachusetts State Sanatorium at Rutland, the first state institution of its kind in this country, which provides for the treatment of persons ill with tuberculosis, and for the construction of three new sanatoria at North Reading, in northeastern Massachusetts; at Lakeville, in southeastern Massachusetts; and at Westfield, near the West Springfield line, in the Connecticut valley. It is suggested that notice of any person needing to be cared for in such hospitals may be brought to the attention of the state inspector of health in whose district the person lives.

Inasmuch as the state cannot hope to provide sanatoria for all persons ill with tuberculosis, heads of families and householders are told ways in which members of the household may be prevented from taking the disease. In order to insure the most careful protection of a family whenever a member is sick with tuberculosis, it is recommended that the other members, especially the children, be examined and that, meanwhile, young children be kept away from the patient and from the room or rooms in which the patient stays. The importance of keeping bedrooms clean and well-aired is emphasized, and simple instructions relative to cleansing and disinfecting rooms lately occupied by persons ill with tuberculosis are given.

On the other hand, the individual patient is requested to take certain precautions in order to prevent members of his family and other persons from taking tuberculosis. In illustrating the need of teaching patients how to protect other persons, the following case is cited: A woman of forty-five years had been ill with tuberculosis for eighteen months. Recently one of her three daughters, aged fifteen, was seized with the same disease. During one of her violent coughing spells the mother shielded her mouth with her right hand. Immediately upon stopping she went to the pantry, put her right arm into a bag of apples, took out three apples, polished each of them with her right hand, then passed one to each of her three children, who eagerly ate of the fruit. Not long afterward the oldest daughter was found to have the disease throughout her body and later died at a hospital to which she and her mother were sent.

Employers are reminded that persons who work day after day in rooms which are impossible of ventilation may, after a time, lose weight and strength and become ill with tuberculosis and that one of their most important duties to their employees is to provide fresh air and plenty of air space. Employers are also expected to provide suitable receptacles for spitting, the number and kind depending upon the nature of the industry, the cleanliness of the establishment, the employees, etc., conditions to be determined by the local board of health in the town or city where the factory is located.

Among the suggestions given to patients are cautions in avoiding unnecessary exposure to extreme changes in the weather, and in spending money for patent or proprietary preparations or drugs of any kind without the advice or consent of a physician in good standing.

The final suggestions given to the public are of such widespread importance that they are reproduced in full:

1. Well persons who persist in spitting in places prohibited by law should not forget that some of the persons who are sick with tuberculosis will see them spit and pattern after them, and in this way endanger the lives of others. It is important to acquire clean personal habits, both for the purpose of protecting one's self and others.

2. Every one who has a cough should make an effort to cough as little as possible. By so doing he helps himself and greatly lessens the risk of making others ill.

3. It is not at all uncommon to-day to hear of instances where the very means of obtaining one's livelihood have been taken away because the person was unfortunate enough to have tuberculosis. To take away from such a person the means of obtaining his livelihood is to take it from the very person who needs it most.

It should be remembered that a person ill with tuberculosis, whose personal habits are clean and who takes care of the material which he coughs up, is a safe person to live with and that he may attend to his work without endangering his fellow workmen. Failure to appreciate this fact is already causing many hardships, which are both unnecessary and unjust.

Appended to the subject-matter is a list of names of the state inspectors of health, with the health district numbers, followed by a table which shows the health district number of each city or town in Massachusetts, so that one may, at a glance, obtain the name of the state inspector of health who has jurisdiction over any particular town or city in the state.

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ANIMAL EXPERIMENTATION.

The recurring agitation regarding animal experimentation renders it highly desirable that every means should be taken to prevent misapprehension. It often happens that the so-called evidence used by hostile critics of such experimentation is taken from articles in journals devoted to the medical sciences. In such articles it not infrequently happens that no special mention is made of the anesthesia to which the animal is subjected preliminary to and during the experiment, and the assumption is quickly made by those interested that anesthetics have not been administered. It becomes, therefore, very desirable that those writing articles in which a description of animal experiments is given should in every instance state the anesthetic employed. The medical journals can no doubt do much by insisting that articles submitted to them for publication be not worded in such a way as to cause misapprehension, and particularly that a statement of the anesthesia be appended. By this means it is evident that much misunderstanding may be allayed and that the public as well as the medical profession may be given information regarding methods of conducting experiments on animals which both have a right to know. If the medical journals throughout the country unite in an effort to require such statements as we have indicated above, much may be done for the cause of legitimate medical research.

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MEDICAL NOTES.

Dinner to Dr. Edward N. Brush. — A dinner will be given Dec. 11 to Dr. Edward N. Brush, of the Sheppard and Enoch Pratt Hospital, of Baltimore, as a mark of appreciation of the service he has rendered in the public and private care of the insane. He has completed thirty years of service in institutions in New York, Pennsylvania and Maryland, and during this period has been closely identified with progress in psychiatry.

Appointments to the Hospital of the Rockefeller Institute for Medical Research. — At a recent meeting of the Board of Directors of the Rockefeller Institute for Medical Research, Dr. Rufus I. Cole, of the Johns Hopkins Medical School, Baltimore, was appointed director of the Hospital of the Rockefeller Institute for Medical Research, and Dr. Christian A. Herter was appointed one of the physicians to the hospital. Work on the hospital buildings is in progress. It is expected that the hospital will be completed and ready for occupancy in November, 1909.

Immunization of the Army against Typhoid. — After a careful investigation of the subject of inoculation as a preventive against typhoid fever and the desirability of its adoption in the United States Army, Surgeon-General O'Reilly has made the following statement:

"The board is convinced of the usefulness and the harmlessness of anti-typhoid vaccination and has recommended that the practice of voluntary vaccination be introduced in the army of the United States as a practicable means of diminishing the amount of typhoid fever."

The composition of the Board is as follows: Surgeon-General O'Reilly, President; Dr. V. C. Vaughan, of Ann Arbor, Mich.; Dr. W. T. Councilman, Harvard; Dr. John H. Musser, University of Pennsylvania; Dr. Alexander Lambert, professor of clinical medicine at Cornell; Dr. Simon Flexner, director of the Rockefeller Institute, and Dr. W. S. Thayer, Johns Hopkins Medical School.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Dec. 8, 1908, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 73, scarlatina 64, typhoid fever 9, measles 12, smallpox 0, tuberculosis 44.

The death-rate of the reported deaths for the week ending Dec. 8, 1908, was 19.38.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Dec. 5, 1908, was 234, against 216 the corresponding week of last year, showing an increase of 18 deaths and making the death-rate for the week 19.72. Of this number 128 were males and 106 were females; 229 were white and 5 colored; 139 were born in the United States, 87 in foreign countries and 8 unknown; 41 were of American parentage, 150 of foreign parentage and 43 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 76 cases and 2 deaths; scarlatina, 65 cases and 4 deaths; typhoid fever, 13 cases and 1 death; measles, 31 cases and 3 deaths; tuberculosis, 46 cases and 18 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 35, whooping cough 4, heart disease 23, bronchitis 7 and marasmus 8. There were 20 deaths from violent causes. The number of children who died under one year was 44; the number under five years 65. The number of persons who died over sixty years of age was 65. The deaths in public institutions were 82.

Cerebrospinal meningitis, 1 case and 1 death.

Deducting deaths of non-residents, the total is 213. The corrected death-rate is then 17.95.

Bequest to the Malden, Mass., Hospital. — The Malden Hospital receives the sum of $5,000 for the establishment and maintenance of a free bed under the will of the late Mary H. Thompson of that city.

Bequests. — By the will of the late Caleb Chase, public bequests to the amount of $180,000 are made. Among the beneficiaries are the Woman's Charity Club Hospital, the Infants' Hospital, the Industrial School for Crippled and Deformed Children in Boston, each $5,000. The Boston Floating Hospital receives $10,000.

Bequests to Harvard University and to the Massachusetts General Hospital. — Through the will of the late Mrs. Grace H. Kuhn Harvard University receives $175,000. The purpose of this bequest is said to be the endowment of a department of biological chemistry. Through the same will the Massachusetts General Hospital is a beneficiary in the sum of $10,000.

The Boston State Hospital. — The newly constituted Boston State Hospital, owing to deficiency in accommodation for the insane of the city, will be able to send to the Boston institution only the following cases:

(1) Insane persons who have been residents of Boston ten years or more, and of such persons only those who have relatives actively interested in them who will visit them frequently.

(2) Other insane persons, only in emergency, whose condition does not permit the delay or exhaustion incident to commitment to a distant state hospital.

NEW YORK.

A Free Bed. — Mrs. Russell Sage has endowed a bed in perpetuity at the Nassau Hospital, Mineola, Long Island, for $5,000 in memory of the late Miss Kate Ridell, founder of the Children's Home at Mineola. Miss Ridell was well known as a philanthropist and was one of Mrs. Sage's most respected friends.

Day Camp for Tuberculosis Patients. — The day camp for tuberculosis patients on the roof of the Vanderbilt Clinic was opened for inspection on Nov. 28, and for the reception of patients on Dec. 2. The camp has been equipped by the New York State Branch of the National Red Cross Society, which will also defray the cost of maintenance, and it will be conducted under the auspices of the medical department of Columbia University.

Beth Israel Hospital. — At the graduating exercises of the Training School for Nurses of the Beth Israel Hospital on Nov. 23, diplomas were given to a class of eleven. Among the speakers was Adolph Lewisohn, who pledged himself to contribute $10,000 to the building fund of the hospital, which, independently of this gift, now amounts to $50,000. The present site of the institution is valued at $500,000 and the managers intend to select a location for the proposed new hospital somewhere between Houston and Fourteenth streets, on the East Side.

New York Physicians in Army Medical Reserve Corps. — Among the New York physicians who have accepted commissions in the new Army Medical Reserve Corps, in accordance with the plan of Surgeon-General O'Reilly to create in time of peace an organization of the foremost medical men of the country, which, in the event of war, would be able to place the medical arm of the volunteer service in condition for efficient service in the field, are Drs. John A. Wyeth, president of the Academy of Medicine; A. H. Doty, Health Officer of the Port; Thomas Darlington, president of the Health Department; Simon Flexner, director of the Rockefeller Institute; Robert F. Weir, Robert Abbe, Robert T. Morris, A. Alexander Smith, Wm. Gilman Thompson, Francis P. Kinnicutt, Alexander Lambert, V. P. Gibney, Frederic S. Dennis, Carl Beck, William B. Coley, Frank P. Foster, Samuel Lloyd, George D. Stewart and Lewis A. Conner.

Death-Rate. — The death-rate in the city continues almost unprecedentedly low, although in most of the principal diseases there has been a slight increase, owing, no doubt, to the advent of colder weather and the consequent shutting out of fresh air from habitations. As a result, the mortality was slightly higher in November than in October, although in the first week of the month the death-rate came down to the previous record mark in the history of the Health Department, 13.45 in the third week of June last. The weekly reports of the Department show that the mortality represented an annual death-rate of 14.64, as against 14.26 in the month of October and 15.87 in November, 1907. Among the diseases in which there was a diminished fatality were the following: The weekly average of deaths from typhoid fever declined from 17.5 in October to 11 in November; the weekly average from cancer, from 66.75 to 64.5; from diarrheal diseases, from 116.5 to 62; and from diarrheals under five years of age, from 108.5 to 55.5. Among the diseases in which there was an augmented mortality were the following: The weekly average of deaths from measles increased from 2.75 to 4.5; from scarlet fever, from 4.25 to 7; from diphtheria and croup, from 18.75 to 28.5; from pulmonary tuberculosis, from 146 to 163; from acute bronchitis, from 12 to 17.75; from pneumonia, from 66.5 to 88.75; from bronchopneumonia, from 60.75 to 78.5; from apoplexy, congestion and softening of the brain, from 26.75 to 29.5; from organic heart diseases, from 126 to 141.75; from Bright's disease and acute nephritis, from

91.25 to 94.75; and from cirrhosis of the liver, from 20 to 21. The corrected death-rate for the month, excluding non-residents and infants under one week old, was 13.63. The condensed quarterly report of the Bureau of Records of the Health Department shows that in the quarter ending Sept. 30, 1908, the death-rate in the city was 16.24, as against 18.66 in the corresponding quarter of 1907. In comparing the number of deaths from the principal causes with those of the averages of the corresponding quarters of the five preceding years, it is found that there was an increase in only three of such causes, namely, scarlet fever (increase 18), cancer (16) and organic heart disease (207).

Current Literature.

New York Medical Journal.

Nov. 14, 1908.

1. Conger, A. B. *The Relations of the Priest and the Physician.*
2. Knott, J. *Iron.*
3. Woehnert, A. E. *Report of Sixteen Cases of Achylia Gastrica.*
4. Klingmann, T. *Adiposis Dolorosa.*
5. Ezdorf, R. H. *Report of the Proceedings of the Third International Sanitary Convention.*
6. FitzGerald, W. H. *The Resistant Breathing Tract.*
7. Abraham, R. *A Case of Generalized Xanthoma Planum in a Child.*

Nov. 21, 1908.

1. Knott, J. *Iron.*
2. Nicoll, A. *Report of 422 Cases of a General Surgical Nature from the Surgical Service of Fordham Hospital.*
3. *Mitchell, O. W. H. *Lipoma of the Kidney.*
4. LeRoy, B. R. *A Study of Spores developed at an Elevated Temperature.*
5. Lange, S. *Pulsations of Large Aneurysms, Non-Expansile but Transmitted.*
6. Newmayer, S. W. *An Adjustable Lens for Oblique Illumination of the Eyes.*

3. Mitchell considers the etiology of lipoma of the kidney and reports a case discovered at autopsy, death having been due to carcinoma of the uterus. Several glomeruli were adjacent to the tumor tissue and a body very similar to a glomerulus was found within the connective tissue area surrounding the tumor; fat droplets were seen in some connective cells external to it. [L. D. C.]

The Journal of the American Medical Association.

Nov. 14, 1908.

1. McCaskey, G. W. *The Viscosity of the Blood.*
2. Guthrie, C. C. *Physiologic Aspects of Blood-Vessel Surgery.*
3. *Carrel, A. *Results of the Transplantation of Blood Vessels, Organs and Limbs.*
4. *Matas, R. *Statistics of Endo-aneurysmorrhaphy, or the Radical Cure of Aneurysm by Intrasaccular Suture.*
5. *Burns, W. B. *Successful Ligation of the Innominate Artery.*
6. Lovett, R. W., and Lucas, W. P. *Infantile Paralysis.*
7. Ravitch, M. L. *Cheilitis Exfoliativa.*
8. Anthony, H. G. *The Pigmentation of the Mucous Membrane of the Mouth.*
9. Allen, T. G. *Criteria and Standards in Infant Feeding.*
10. Cook, H. W. *The Cardiovascular System in Prognosis. With Special Reference to Life Insurance Examinations.*

3. Carrel's careful experiments on the transplantation of blood vessels, organs and limbs show that sections of arteries kept for several days outside the body can be successfully transplanted; that sections of veins transplanted adapt themselves to the arterial functions and react against the increased blood pressure by thickening their walls; that when vessels of another species are used the vessel is progressively transformed into a tube formed almost entirely of connective tissue, but nevertheless a perfectly useful tube; that transplanted kidneys functionate, and finally that a leg can be transplanted from one dog to another and heal normally.

4. Matas analyzes the 85 cases of aneurysm operated on by his intrasaccular suture method and discusses the necessity of and the difficulty in securing absolute occlusion of the main trunk above the aneurysm.

5. Burns analyzes the 46 cases of ligation of the innominate artery and reports a case of his own with recovery. [E. H. R.]

Nov. 21, 1908.

1. Miller, J. L. *Some Principles of Drug Treatment in Cardiovascular Conditions.*
2. English, D. E. *The Development of the Infant's Stomach.*
3. Hollopeter, W. C. *The Prephysical Signs of Tuberculosis in Children.*
4. Davis, G. E. *Reactions of the Labyrinth and their Significance in the Diagnosis of Suppurative Labyrinthitis.*
5. *Lincoln, M. C. *Serum Diagnosis of Tuberculosis. The Tuberculo-opsonic Index. The von Pirquet Skin Test and the Conjunctival Test.*
6. *Pfahler, G. E. *Treatment of Epithelioma by Röntgen Rays*
7. Gottheil, W. S. *X-Ray Uses, Dangers and Abuses.*
8. *Robb, H *Ruptured Tubal Pregnancy. When shall we Operate?*

5. Lincoln describes in detail the von Pirquet tuberculin skin test, the Calmette or Wolff-Eisner conjunctival tuberculin test, the tuberculo-opsonic index, analyzes a series of cases on which these tests were tried, and concludes that: (1) The percentage of positive reactions to the von Pirquet skin test, the conjunctival Calmette test and the tuberculo-opsonic index are substantially the same, ranging from 80% to 90% in favorable cases and from 30% to 40% in unfavorable cases. (2) The more advanced the disease, the smaller the percentage of positive reactions. The intensity of the reaction does not consistently follow any rule, but tends to be greater in cases of less advanced disease. (3) The von Pirquet test seems harmless. The conjunctival test should be used with caution.

6. Pfahler gives the results of his treatment of epithelioma by x-rays and believes that: (1) Early superficial epitheliomata, involving the skin of the face and back of the hands, treated by x-rays, give good results in practically all the cases. The treatment is painless with least possible scarring, and is more likely to be permanent than any other form of treatment. (2) Epitheliomata associated with senile keratoses yield to x-rays easily, but there is more likelihood of recurrence. (3) Deep ulcerating areas with indurated fibrous bases do not yield good results under this treatment and should be excised when possible. When not possible, x-rays will often give relief from pain, lessen discharge and prolong life. (4) Epithelioma involving the mucous membranes of the lower lip or cheek should be excised and the excision followed by treatment of the glandular area with Röntgen rays.

8. Robb, in discussing the time for operation in tubal pregnancy, emphasizes the following facts: (1) More conservatism in the treatment of ectopic pregnancy is called for in the majority of cases. (2) Many women not only survive the effects of tubal pregnancy and rupture, but also recover without operation. (3) More than 5% of the victims of ectopic pregnancy die at the time of rupture, whereas after immediate operation in 1,176 cases the mortality was 8% (4) When a patient is seen in a state of collapse, as a result of a ruptured ectopic sac, she should not be operated on until the condition of shock has been tided over. (5) These patients rarely die from loss of blood alone, but mainly from shock,

Therefore, the additional shock of a major operation is bad treatment. (6) In most cases when we operate to ligate a bleeding vessel no bleeding vessel is found. (7) Patients in whom the bleeding would be sufficient to cause death are rarely seen in time to be saved by an operation for ligating the bleeding vessels. [E. H. R.]

SURGERY, GYNECOLOGY AND OBSTETRICS.
NOVEMBER, 1908.

1. *YATES, J. L. *An Experimentol Study of Intraperitoneal Diffusion with Reference to Toxin Absorptions.*
2. *KRETSCHMER, H. L. *Cystitis Glandularis et Follicularis.*
3. *FAY, O. J. *Enormous Ovarian Cysts. Report of a Case.*
4. *WILLIAMS, C. D. *Etiology of Ectopic Gestation.*
5. MALCOLM, J. D. *On Gangrene of the Vermiform Appendix.*
6. *PARK, R. *The Nature of the Cancerous Process.*
7. *KOHN, A. D. *Hemorrhages from the Stomach and Bowels following Operations on the Gall Bladder and Appendix.*
8. *DYAS F. G. *Acute Osteomyelitis.*
9. BROWN, J. Y., AND ENGELBACH, W. *Report af a Case of Gastric Tetany, Operation, Recovery.*
10. HOOK, W. V. *The Management of Large Inguinal Canals.*
11. BARLING, G. *A Note on Operation for Dislocation of the Shoulder and Hip.*
12. LUCID, M. M. *An Intraperitoneal Method for the Radical Cure of Abdominal Hernias.*
13. BREMERMAN, L. W. *The Diagnosis and Treatment of Vesical Calculus.*
14. RICHTER, H. M. *A Positive Pressure Apparatus for Intrathoracic Operations. Preliminary Report.*
15. RICHTER, H. M. *A New Technic for the Suture of the Vas.*

1. Yates, in his experimental study of intraperitoneal diffusion, used injections of lamp black, moccasin and cobra venom with his dogs in three positions, viz., head up, horizontal, head down, and concludes that: (1) Intraperitoneal diffusion results from the operation of purely physical forces abetted by physiologic activities. (2) The restriction of diffusion and consequent absorption (which varies directly with the extent of diffusion) is best obtained by the action of generous doses of opium to reinforce the diminished activity in an empty alimentary canal, general bodily quiet with its resultant lessened respiration and by the maintenance of that position of the body which will oppose the action of gravity to the direction of most disadvantageous extension. (3) Rest and cessation of peristalsis are of more importance than starvation and posture.

2. Kretschmer discusses follicular and glandular cystitis and reports a case. He believes that both gland tissue and lymph follicles do appear at times in the normal bladder in spite of many contrary statements by other writers.

3. Fay describes an enormous ovarian cyst of twenty-one years' growth, the abdomen measuring seven feet three inches in circumference, and the fluid removed by tapping previous to operation weighing 150 pounds.

4. Williams, after an exhaustive study of microscopic sections of tubes, concludes that the presence of false mucous-lined channels or diverticula produced by previous inflammatory process in the tubes is the predisposing cause of tubal pregnancy in at least 95% to 98% of all cases.

6. Roswell Park discusses the infectivity of cancer and cites both clinical and experimental evidence. *a.* Cases of direct transmission from a diseased to a healthy area, as from lip to lip or after tapping a cancerous ascites; transmission from wife to husband; cancer houses, i. e., houses in which so many deaths from cancer have occurred that it seems most probable that the dwelling itself was in some way infected; epidemic appearance of cancer in certain limited regions. *b.* Loeb's experiments on rats and further evidences of the behavior of the disease, i. e., its resemblance to other known infections, with reactions to certain sera, its tendency to hemolysis, its behavior to transfusion, its ending by terminal infection and the practically complete demonstration that in animals it *is* an infectious disease. The fact that it does not conform absolutely to Koch's laws does not preclude its being an infectious process, of which we have such abundant evidence.

7. Kohn cites numerous cases of hemorrhage from the stomach and bowels following operations on the appendix and gall bladder, and believes that the principal exciting causes are (*a*) age, because of rigid blood vessels; (*b*) latent gastric or duodenal ulcers; (*c*) traumatism to stomach or intestine during operation; (*d*) anemia and marasmus; (*e*) infection, local or general; (*f*) increased blood pressure in heart or lung diseases; (*g*) thrombosis of gastric or intestinal vessels.

8. Dyas, in a careful analysis of osteomyelitis, believes that trauma and the anatomic arrangement of the blood vessels of the long bones are important predisposing causes, also a previous infectious disease. The staphylococcus aureus is the most common infective agent. The shafts of the long bones are the most commonly affected when the focus is single, but the flat bones are more often involved in metastatic foci. The infection is much more apt to arise in the periosteum than in the spongy bone. The period of incubation is from a few hours to a few days. Pain, fever, intoxication, are the chief symptoms, which, however, may be completely masked by extreme nervous symptoms, such as convulsions, delirium and coma. The clinical course is liable to be of the long, septic nature with many fluctuations. The treatment is *always* surgical. [E. H. R.]

THE LANCET.
NOV. 14, 1908.

1. *FOXWELL, A. *Address on the Clinical Examination of the Urine with Especial Reference to the Estimation of Urea.*
2. BUCHANAN, G. B. *Treatment of Acute Inflammatory Conditions by Bier's Hyperemia.*
3. MANDERS, H. *Novel Methods of Operation in the Removal of Malignant Tumors.*
4. ROBERTSON, W. F. *Recent Investigations into the Pathology and Treatment of General Paralysis and Tabes Dorsalis.*
5. * LANDOUZY, L. *Note on La Typho-Bacillose.*
6. JOWERS, R. F. *Two Interesting Cases of Intussusception.*

1. Foxwell, in an article on clinical examination of the urine, emphasizes the importance of considering deviations from normal conditions of the urine rather than putting special weight on the presence of abnormal constituents. In other words, he believes that the presence or absence of albumen is of comparatively little importance as indicating the presence or absence of nephritis, chronic or acute; that kidneys which have been injured but are now entirely healed may show in the urine traces of albumen, which is not of the least significance. On the other hand, variations from the normal twenty-four hour amount of water and variations from the normal amount of urea he believes to be the most important if not the only important points in a clinical examination. The presence of various kinds of cells as indicating lesions along definite parts of the urinary tract he thinks has no value. The importance of casts he believes is overestimated and thinks that it is analogous to the raising up of sputum, mucus or pus from the bronchial tubes, which shortly afterwards become entirely healed. He presents tables and cases showing the value of estimating the total amount of urea excreted.

5. Landouzy presents an abstract of the paper read at the International Congress on Tuberculosis. He describes in what he believes is a definite clinical entity a form of tuberculous septicemia, typho-bacillose. This very closely resembles typhoid fever, with continued fever and enlarged spleen but no signs of visceral lesions. Blood culture and Widal reaction to typhoid and paratyphoid is invariably negative. There is no rash. This form of disease he distinguishes from that form known as miliary tuberculosis, and he believes that many cases of long-unexplained fever usually thought to be due to the typhoid bacillus or some allied organism are really due to this form of tuberculous fever. Many cases end in recovery. He gives the details of three cases. [J. B. H.]

British Medical Journal.
Nov. 14, 1908.

1. *MacWilliam, J. A., and Mackie, A. H. *Observations on Arteries, Normal and Pathological.*
2. *Lewis, T. *Lecture upon the Normal Venous Pulse.*
3. Turrell, W. J., and Gibson, A. G. *Case of Adams-Stokes Syndrome observed for more than Eight Years.*
4. Gibson, J. L. *Plumbic Ocular Neuritis in Queensland Children.*
5. Cheatle, G. L. *Note on the Influence of the Nervous System upon Infective Processes.*
6. Savage, G. H. *Address on Mental Cripples.*
7. *Selkirk, W. J. B. *Tuberculosis in Limeworkers.*

1. MacWilliam and Mackie present an article of pathologic interest on the continuance of the normal contractibility of the arteries, human and animal, after death. When death occurs by relatively gradual exhaustive process the state of the arterial muscle at the time of death may be such that its contractility soon disappears. When, however, death is due to sudden disease, or when the artery is taken from an amputated limb, the power of contraction sometimes persists for two or there days.

2. Lewis discusses the normal venous pulse. He gives a brief history of the knowledge of the venous pulse in animals and man, the method of obtaining tracings, with a description of the apparatus, the general constitution of the venous pulse and the relation of venous records to other methods of examining the pulse, the constitution and analysis of the normal venous pulse. He gives a very complete bibliography of the literature on this subject.

7. Selkirk has studied the mortality and the state of health in the limeworkers in the numerous kilns around Edinburgh. Somewhat to his surprise he has found that despite the very large amount of lime dust present in this occupation, the standard of health among workers is very high and that tuberculosis is practically unknown. He advises a further investigation of this subject among limeworkers elsewhere. [J. B. H.]

Deutsche Medizinische Wochenschrift. No. 44.
Oct. 29, 1908.

1. *Cassirer. *Prognosis and Treatment of Vasomotor Trophic Neuroses.*
2. Boruttan, H. *The Behavior of Bromglidine in the Organism.*
3. *Peters, C. *The Use of Isopral in Cardiac Cases.*
4. Vogt, H., and Rondoni, P. *The Structure of the Cerebral Cortex.*
5. *Möller, S. *Polycythemia and Blood Pressure.*
6. Henkel, M. *Prognosis and Treatment of Puerperal Infection.* (Continuation.)
7. Crzellitzer. *Family Tree of a Family with Frequently Occuring Cataract, together with Methodologic Observations on the Representation of Family Trees for Medico-Biologic Purposes.*
8. Oppenheimer, E. H. *A Peculiar Case of Parinaud's Conjunctivitis.*
9. Wohlgemuth, J. *The Secretion of Pancreatic Fistulæ and Its Treatment by Antidiabetic Diet.*
10. Wilenko, G. G. *Glutaric Acid and Phlorizin Diabetes.*

1. Cassirer takes up the question of the prognosis and treatment of acroparesthesia, Raynaud's disease, erythromelalgia, scleroderma and localized edema. In all these diseases there is no pathological anatomic lesion which will account for the symptoms. He urges against giving too favorable a prognosis, as either the same condition may recur or some other neurosis may appear. As regards life, however, the prognosis is always good, except in the cases of localized edema that occur in the larynx. These may cause sudden death from suffocation. In general the treatment consists in keeping the patients as free as possible from exposures that may bring on these attacks. For the general condition he recommends tonics. For Raynaud's disease he mentions electricity and local hyperemia as valuable aids in treatment.

3. Peters emphasizes the value of isopral as a hypnotic in cases that have some cardiac disturbance. He goes over the literature pretty carefully and shows that no authors have shown that its use is harmful. Some have maintained that its use is harmful in a few cases, but on careful consideration of the cases Peters doubts that the injury was due to isopral. He concludes that isopral in therapeutic doses has no action on the heart muscle, valves or nerves, nor on the vascular system or blood pressure, which is detrimental to a case complicated with cardiac or vascular disease.

5. As several cases have been reported where there was a polycythemia and also increased blood pressure, Möller examined the corpuscle content of blood in 35 cases that showed a high blood pressure and found only two with a persistent high red count. In some of them there was marked variation from a high to a low count. He concludes that there is no constant relation between a high blood pressure and a high red count which can be used as a diagnostic aid. [C. F., Jr.]

Münchener Medizinische Wochenschrift. No. 42.
Oct. 20, 1908.

1. Pfannenstiel, J. *Habitual Icterus Gravis of the New-born.* (To be continued.)
2. *Hamburger, F. *Tuberculin Immunity.*
3. *Strauss, M. *Marmorek's Serum in the Treatment of Surgical Tuberculosis.*
4. Koch, W. *Origin and Treatment of Intestinal Herniae. IV.*
5. Orth, O. *Contribution to the Serum Treatment of Epidemic Cerebrospinal Meningitis.*
6. Klostermann, H. *Tumors of the Cranial Vault.*
7. Schottelius, E. *Bacteriologic Technic.*
8. Gilmer, L. *Rapid Röntgenography for Surgical Cases.*
9. Erb, W. *Syringomyelia and Dystrophy.* (Conclusion.)
10. Boos, I., and Ehrlich. *Carcinoma Ventriculi from Achylia.*

2. Hamburger reports the case of a child to whom he gave daily doses of 1 mgm. of tuberculin subcutaneously for seven days. Marked general reactions at first were followed later by improvement of condition and complete failure to react. Pirquet's skin reaction, tried simultaneously, failed at the same time but returned a few days after the injections were stopped. Autopsy showed advanced tuberculosis of the mesenteric glands. He offers the hypothesis that the failure of the reaction was due to lack of available antibodies as a result of flooding the system with tuberculin, but he doubts that this explanation would hold for all cases.

3. After briefly reviewing the work of others done with Marmorek's serum, Strauss reports a large variety of tuberculous cases, 37 in number, which he treated himself. As a result of his work he regards the use of this serum by *rectum* as untirely harmless in all cases. He believes it to be beneficial in a certain number and recommends trying it in surgical cases where the disease is not far advanced. (His results seem fully to justify his recommendation.) [G. C. S.]

No. 43. Oct. 27, 1908.

1. Bergell, P., and Falk, E. *The Function of the Placenta.*
2. *Mayer, O. *The Resistance of Bacilli of the Paratyphoid B. Type in Human Dried Feces.*
3. Schultze, K. *Contribution to the Fulguration Treatment of Malignant Tumors.*
4. *Schrumpf, P. *Dangerous Results of Calmette's Ophthalmo-reaction.*
5. Sachs, W. *Symptoms of Strangulation in Fat Hernias.*
6. Hartleib. *Treatment of Traumatic Synovitis of the Knee.*
7. Rabl, H. *Treatment of Incarcerated Hernia by Atropin.*
8. Beldan, G. *Early Diagnosis and Treatment of Bronchiectasis.*
9. Kaufmann, R. *A New Urethral Endoscope (Urethrotelescope).*
10. Pfannenstiel, J. *Habitual Icterus Gravis of the New-born.* (Conclusion).

2. Mayer dried and pulverized the stools of several cases of B. paratyphoid infection in which the bacilli were abundant, kept the powder in corked bottles in the dark and ob-

tained an abundant growth of the bacilli on culture media one year and a half later. He believes that this remarkable resistance to drying accounts for some of the sporadic cases of paratyphoid not otherwise explainable. He emphasizes the importance of disinfection of excreta and the necessity for examination of the stools of healthy recruits who come from regions where the disease has occurred.

4. The author records two cases in which one drop of a 1% solution of old tuberculin resulted in nearly complete loss of vision in the eyes tested, although they appeared before the test entirely normal. He states further that subsequent tuberculin treatment of cases which have given a strong reaction causes return of inflammation after every injection, so that cases in which good results might be expected from this treatment cannot be treated satisfactorily in this way. A third disadvantage is the depressing mental effect of a positive reaction on patients in whom no other sign of tuberculosis can be found during life. [G. C. S.]

Berliner Klinische Wochenschrift. No. 42.

Oct. 19, 1908.

1. Lewin, L. *Fatal Inflammation of the Lungs from Inhalation of Ammonia Gas.*
2. Filiger, J., and Jensen, C. O. *Investigations on the Relations between the Tuberculosis and the Tubercle Bacilli of Man and those of Cattle.* (To be continued.)
3. Neminy, J. *Elemental and Colloidal Sulphur* (*Sulfidal*). (To be concluded.)
4. Rubens. *Some Observations in Scarlet Fever Epidemics.*
5. Zeissler, J. *The Wasserman Reaction in Scarlet Fever.*
6. Smirnoff, P. P. *A Case of Complete Transposition of the Viscera.*
7. Levinsohn, G. *The Origin of Glaucoma.*
8. *Reicher, K. *Etiology and Treatment of Pernicious Anemia.* (Conclusion.)

8. Reicher found in normal organs as well as in tumors and the parasites causing anemia a hemolysin. This hemolysin is comparable to the hemolytic toxolecithid of cobra venom and the toxolipoid of Tallquist. Cholesterin in oil will prevent poisoning with the venom or anemia with the toxolipoid substance of parasites. Reicher offers the hypothesis that cholesterin normally binds a hemolysin in the body; in pernicious anemia the hemolysin is not bound. He cites four cases, but the results were not remarkable. He gives 100 gr. of a 3% solution of cholesterin in olive oil daily. [R. I. L.]

Die Therapie der Gegenwart. Heft. 11.

November, 1908.

1. Senator, H. *The Symptomatic Treatment of Pulmonary Tuberculosis.*
2. *Forlanini, C. *The Indications for and the Technic of Artificial Pneumothorax in the Treatment of Phthisis.*
3. Otto, R. *The Danger of Re-Injection with Therapeutic Serum.*
4. Sadger, J. *Hydrotherapy in Arteriosclerosis.*
5. Ritter, P. *The Rarer Ulcerative and Necrotic Processes in the Mouth.*

2. Forlanini believes that tuberculous processes in the lung are so modified by the peculiar function of this organ that the therapeutic problem is very different from that in other parts of the body. The capacity of the organ, the quantity and pressure of the contained air, changes in tissue strain, all of these have an important bearing on the activity of the pathologic process. The course of the disease depends upon the degree of "functional motility" of the lung. Reduction of "motility" favors the formation and extension of the destructive process; absolute rest of the lung, by increasing this "motility," hinders it. An artificially produced pneumothorax will, he asserts, check the phthisical process if its volume and pressure are sufficient completely and permanently to immobilize the diseased lung. In order to produce such a "therapeutic pneumothorax," he has devised elaborate apparatus for aspiration of the lung and for measuring and regulating intrapleural pressure. He considers this method particularly indicated in uncomplicated cases limited to one lung and with a free pleura. [L. D. C.]

Revue de Chirurgie.

November, 1908.

1. Marion, G. *Obituary of Paul Berger.*
2. *French Congress of Surgery. *Twenty-first Session, Held at Paris from October 5 to 10, 1908.*

2. The proceedings of the recent session of the French Congress of Surgery included formal consideration of biliary surgery, of the surgical treatment of pathologic bony cavities and of the surgical treatment of facial neuralgias. Nothing of notable import was contributed on any of these subjects. Among the miscellaneous questions also presented was that of intrathoracic surgery. Brauer showed 3 cases of pulmonary tuberculosis cured or improved after thoracotomy for the production of therapeutic pneumothorax, a procedure which he has performed eight times with three deaths and which he believes indicated in severe unilateral phthisis. Baudet reports 7 cases of thoracotomy and pulmonary suture for severe trauma, with five recoveries and 2 deaths. He advocates exploratory thoracotomy for diagnosis of obscure mediastinal conditions. Reynés reported great success from extensive resection of the thoracic wall with digital curettage of the pleura for empyema, essentially the modified Estlander operation. Vidal presented a simplified portable apparatus for positive pressure in cardio-respiratory surgery. [R. M. G.]

Obituary.

ANDREW J. McCOSH, M.D.

Dr. Andrew J. McCosh, of New York, died on Dec. 2, as a result of injuries received a few days previously in a carriage accident. While on his way to the Presbyterian Hospital, on Nov. 28, the spirited team of horses which he was accustomed to drive took fright and started to run, and his runabout, coming in contact with a heavy wagon, was overturned. His coachman was thrown out and but slightly injured, but Dr. McCosh was caught in the wreck and dragged for some distance. In front of the Babies' Hospital, at the corner of Lexington Avenue and 55th Street, his head struck violently against the curbstone and on being carried into the hospital it was found that he had suffered a fracture at the base of the skull, a fracture of the clavicle and internal injuries. In the meanwhile an ambulance had been summoned from the Presbyterian Hospital, to which he had long been an attending surgeon, and he was promptly removed to that institution. He never recovered consciousness and on Dec. 1 pneumonia set in.

Dr. McCosh was the only son of the Rev. Dr. James McCosh, the distinguished president of Princeton College, and was born in Belfast, Ireland, in 1858, while his father was professor of logic and metaphysics at St. John's College. He was graduated from Princeton in 1877 and from the College of Physicians and Surgeons, New York, in 1880. In 1881–82 he took a post-graduate course at the University of Vienna and then came to New York to practice. He was fortunate in being taken as assistant by the late Dr. T. Galliard Thomas, with whom he remained for several years. On severing this connection he decided to devote himself to the field of general surgery, and in 1887 he received the appointment of assistant surgeon to the Presbyterian Hospital. Later he was made an attending surgeon and at the time of his death he was president of the medical board of the hospital. He always did most careful, painstaking work, and was very successful in his chosen department. His untimely and lamented death is a distinct loss to the profession, though he lacked the fertility of resource, mechanical facility and rare deftness of operative skill which characterize the surgeon of the first rank, and it is scarcely likely that he would ever have attained the eminence of such men as Bull, Weir and McBurney. Like his father he had a highly metaphysical mind, and it has been remarked by one who knew him well that if he had chosen to direct his attention to mental and nervous diseases his career would probably have been one of exceptional brilliancy. Dr. McCosh was for some time professor of clinical surgery in the College of Physicians and Surgeons, but did not distinguish himself especially as a teacher, and while he was exceptionally well posted on the literature of surgery, he wrote but little. He had made a study of law as well as of medicine and received the degree of LL.D. from both Columbia and Princeton universities, one of these honors being conferred in 1905 and the other in 1906. He ever devoted himself most assiduously to duty, and the high esteem in which he was held in the community is well attested by the hundreds of inquiries and messages of sympathy that were received while he lay in the hospital after his deplorable accident. Dr. McCosh was unmarried and is survived by his venerable mother, ninety-two years of age, and by two sisters, one of whom is the wife of Dr. David Magie, formerly of New York, but now retired and living at Princeton.

The attendance at Dr. McCosh's funeral services, which were held at the Fifth Avenue Presbyterian Church, on Dec. 5, was a notable one. Hundreds of physicians were present, and the other professions, as well as the most influential business interests, were well represented. The pallbearers were ex-Vice-President Levi P. Morton; John S. Kennedy, the munificent benefactor of the Presbyterian Hospital; D. O. Mills, William Taylor Pine, J. R. Stewart, Prof. W. M. Sloane, of Columbia University, and Drs. Walter B. James, M. Allen Starr, George E. Brewer, Frank Hartley, Robert M. Brown and Henry F. Walker.

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Correspondence.

EACH TO HIS PROFESSION.

295 Beacon St., Boston.

Mr. Editor: The neglected responsibility of the general practitioner to his patients' mental attitude toward disease and exhausted nervous conditions is assuming proportions that are demanding unusual attention. The practitioner in general has a well-balanced mind, and it becomes very hard for him to remain passive in the present atmosphere of the exaggerated claims made by the "Mental-cure-all" sects. The practitioner appreciates better than any one else the value of mental relations in disease; he is awakening rapidly to the fact that he has been dealing too exclusively with the patient's disease, and by this exclusiveness has missed an opportunity for personal influence which has been grasped by individuals that are willing to distort a true state of facts to their own personal advantage and profit. Mystery, or the unusual, has always and always will be grasped eagerly by partially trained minds. Why not especially so in regard to a science yet to be perfected, such as medicine, when it can be brought so easily into contact with a mind hungry for religious food? Is this not more emphatic when we consider the Bible, filled as it is with incidents of seeming incurable disease relieved by faith, yes, even the dead restored to the living?

Easy as it is to believe reported events of centuries past as well as to have faith in wished-for future conditions, be they of body or mind, it is but a step to apply such faith to one's present needs. It is only human that one departs from fact to a semi-truth that pleases his desire, the more so when one understands that there is sufficient honesty in his assumed convictions. Perfect self-honesty in the mental equations is seldom felt when dealing with half facts. One accepts the plated untruth, the imagination is pleased, even satisfied, until the plate wears off, then one searches for another base that may retain his mental plate against the "reasonable-fact" attack once more. We do not find the saner trained mind becomes a convert to these distorted psychological aeroplanes of mystic healing.

The practitioner of medicine has a balance of mind better fitted to deal with disease in any or all of its forms than any other profession or non-professional person, and the sooner the medical profession asserts and insists upon this right, through fitness, to handle the sick mind, the sooner will the minimum of harm be attained. The medical profession must oblige itself to assume better personal relations with patients; they must learn better the use of the weapon, "sane conversation," against exhausted and short-circuited brains, so that the jumble of words in use by pseudo-medical clans will find poor soil for rooting false notions. It is not necessary to talk of religion to eliminate wrong ideas. The drunkard or drug habitué will be more frequently saved from his habit by a friendly hand and a word of personal confidence in him than he will by the adoption of some "ism" which he sooner or later may fathom. The practitioner's confident assurance and sane discussion will more frequently give the neurasthenic the path he seeks than will hypnotic suggestion by the members of so-called healing cults, no matter what may be their name or disguise for hypnosis.

The medical fraternity is largely to blame that the present growth of religious healing societies has reached such magnitude. This dealing with functional brain disorders by a largely irresponsible class of men and women has naturally, through minor success, caused them to assume ability to handle real organic and systemic disease by the use of applied faith and suggestion; also the assumption of greater or more daring claims, to the detriment of the victim from delayed proper attention and badly chosen faith. There are enough physicians to take care of this abnormal state of the lay mind provided they do the right type of instructing while attending to the application of their science in their practice. Why not unite in an effort to make the public realize its danger and sidetrack this octopus of distorted faith? If a patient needs religious instruction, point out the rational path to it. If a patient needs moral training, give it by a series of common-sense interviews, letting the patient understand you are treating an abnormal brain condition, and that repeated talks are required. If a patient requires the breaking up of vicious habits, and it is necessary to use active suggestion or hypnosis, do it yourself or send him to a physician trained for such work. There is only minor necessity of combining religion with medical care; both are good, properly used, have a place, and may be lawfully used by the same person. There is more than enough in medicine to keep all of those directly related to it busy for several centuries; there is enough for investigation in religion to keep its following employed for centuries; neither should be restrained in its progress by loading it with other subjects. Keep medical science unadulterated, it will save time and lives, to say nothing of confusion.

There has been enough good accomplished by religious healing societies to have made them a temporary place. It seems fair to assume that their greatest feat will have been that of making physicians realize that personality in the application of their art is as great a factor as the materia medica.

Truly yours,
George Sumner Hill, M.D.

RECORD OF MORTALITY

For the Week ending Saturday, Nov. 28, 1908.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	5	1
Chicago	520	161	Waltham	5	2
Philadelphia	435	108	Pittsfield	14	3
St. Louis	—	—	Gloucester	4	1
Baltimore	171	35	Brookline	6	1
Cleveland	—	—	North Adams	8	5
Buffalo	—	—	Chicopee	5	2
Pittsburg	—	—	Northampton	5	1
Cincinnati	—	—	Medford	1	—
Milwaukee	—	—	Beverly	10	4
Washington	—	—	Leominster	1	—
Providence	—	—	Hyde Park	4	1
Boston	199	68	Melrose	5	1
Worcester	41	11	Newburyport	6	1
Fall River	28	8	Woburn	3	1
Cambridge	29	—	Westfield	8	1
Lowell	22	3	Marlboro	4	1
Lynn	15	3	Revere	3	1
New Bedford	34	9	Attleboro	6	4
Springfield	24	6	Peabody	—	—
Lawrence	22	8	Adams	5	2
Somerville	11	0	Clinton	6	1
Brockton	6	3	Gardner	1	—
Holyoke	16	10	Milford	1	1
Malden	7	3	Watertown	1	0
Chelsea	4	0	Plymouth	—	—
Newton	7	1	Weymouth	2	1
Salem	4	1	Framingham	1	1
Haverhill	10	—	Southbridge	1	—
Fitchburg	10	4	Wakefield	—	—
Everett	7	—	Webster	—	—
Taunton	7	1	Arlington	0	—

LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND OTHER OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED NOV. 25, 1908.

Kalloch, P. C., surgeon. Directed to proceed to Oak Grove, Me., for special temporary duty.

Carrington, Paul M., surgeon. Upon being relieved by passed assistant surgeon H. S. Mathewson, directed to proceed to San Diego, Cal., and assume charge of the station. Nov. 19, 1908.

Wertenbaker, C. P., surgeon. Detailed to represent the Service at the Thirteenth Annual Meeting of the Seaboard Medical Association of Virginia and North Carolina at Washington, N. C., Dec. 1-3, 1908.

Mathewson, Henry S., passed assistant surgeon. Upon being relieved by passed assistant surgeon C. W. Wille, directed to proceed to Fort Stanton, N. Mex., and assume command. Nov. 19, 1908.

Grubbs, S. B., passed assistant surgeon. Directed to report at the Bureau for further instructions, Nov. 21, 1908.

Gwyn, M. K., passed assistant surgeon. Upon being relieved by assistant surgeon Wm. M. Bryan, directed to proceed to Baltimore, Md., and to report to the Medical Officer in Command for duty and assignment to quarters. Nov. 19, 1908.

Holt, John M., passed assistant surgeon. Granted leave of absence for one day. Nov. 14, 1908.

Wille, C. W., passed assistant surgeon. Upon being relieved by passed assistant surgeon J. T. Burkhalter, directed to proceed to Cleveland, Ohio, and assume command, Nov. 19, 1908.

Burkhalter, J. T., passed assistant surgeon. Upon being relieved by surgeon W. P. McIntosh, directed to proceed to Gulf Quarantine Station and assume command, Nov. 19, 1908.

Collins, G. L., passed assistant surgeon. Granted leave of absence for three days from Nov. 17, 1908, under paragraph 189, Service Regulations.

Bryan, Wm. M., assistant surgeon. Upon expiration of present leave of absence, relieved from duty at the New Orleans Quarantine Station and directed to proceed to the South Atlantic Quarantine and assume command, Nov. 19, 1908.

Goldsborough, B. W., acting assistant surgeon. Granted leave of absence for six days from Nov. 28, 1908, under paragraph 210, Service Regulations.

Gustetter, A. L., acting assistant surgeon. Leave of absence for ten days from Nov. 15, 1908, granted Nov. 9, 1908, amended to read from Nov. 16, 1908.

Hill, Eugene W., acting assistant surgeon. Granted leave of absence for four days from Nov. 24, 1908, under paragraph 210, Service Regulations.

Light, S. D. W., acting assistant surgeon. Granted leave of absence for twenty-two days from Nov. 17, 1908.

Minthorn, Henry J., acting assistant surgeon. Granted leave of absence for seven days from Nov. 23, 1908, under paragraph 210, Service Regulations.

Tappan, J. W., acting assistant surgeon. Directed to make inspections at Del Rio and Hidalgo, Tex., Nov. 17, 1908.

Thompson, John K., pharmacist. Directed to proceed to Angel Island Quarantine and report to the Medical Officer in Command for temporary duty, Nov. 17, 1908.

APPOINTMENT.

Dr. Carlisle P. Knight appointed an Acting Assistant Surgeon for duty at Kobe, Japan, Nov. 21, 1908.

BOARD CONVENED.

Board of medical officers convened to meet at the Marine Hospital in Baltimore, Md., Nov. 25, 1908, for the purpose of conducting physical examinations of the members of the graduating class of cadets of the Revenue-Cutter Service: Passed Assistant Surgeon W. C. Billings, chairman; Assistant Surgeon A. J. Warner, recorder.

SOCIETY NOTICE.

The New England Hospital Medical Society.—This society will hold its regular meeting on Thursday, Dec. 17, 1908, at 7.30 p.m., at the Kensington Building, corner of Boylston and Exeter streets, room 201. Section, "General Medicine." Dr. Lucy M. Robinson, Brockton, Mass., chairman. "Psychotherapy. Its Use and Abuse." I. Dr. L. V. G. Mackie, Attleboro, Mass. II. Dr. Bertha C. Downing, Lexington, Mass. III. Dr. Ellen A. Wallace, Manchester, N. H. IV. Discussion opened by Dr. Hobart.

Blanche A. Denig, M.D.,
Secretary.

RECENT DEATHS.

Dr. John T. Wheeler, the most prominent physician of Chatham, Columbia County, N. Y., died from pneumonia on Dec. 4, 1908. He was fifty-eight years of age and was graduated from Bellevue Hospital Medical College in 1876. At the time of his death Dr. Wheeler was director of the Division of Communicable Diseases in the State Department of Health and second vice-president of the Medical Society of the State of New York. He had been a member of the local board of education for twenty-seven years and was also vice-president of the State Bank of Chatham.

Dr. Louis P. Knapp, of Hackensack, Bergen County, N. J., died on Dec. 3, in the forty-first year of his age. He was graduated from the College of Physicians and Surgeons, New York, and afterwards studied in Berlin and Heidelberg.

BOOKS AND PAMPHLETS RECEIVED.

Surgical Memoirs and Other Essays. By James G. Mumford, M.D. Illustrated, New York: Moffat, Yard & Co. 1908.

Posterior Column Degenerations following Injury to the Posterior Roots of the Seventh Cervical Nerves. By H. W. Mitchell, M.D., and A. M. Barret, M.D. Reprint.

Some Observations upon the Attitude of the Medical Witness. By H. W. Mitchell, M.D. Reprint.

Third Scientific Report on the Investigations of the Imperial Cancer Research Fund. By Dr. E. F. Bashford. London: Taylor & Francis. 1908.

Transactions of the American Surgical Association. Vol. XXVI. 1908.

The Arteries of the Gastro-Intestinal Tract with Inosculation Circle. By Byron Robinson, B.S., M.D. Illustrated. Chicago: Chicago Medical Book Co. 1908.

Original Articles.

SOME OF THE DIFFICULTIES, PROFESSIONAL AND SOCIAL, OF THE EARLY RECOGNITION OF TUBERCULOSIS, AND SOME SUGGESTIONS AS TO THE REMEDY.*

BY EDWARD O. OTIS, M.D., BOSTON,
Professor of Pulmonary Diseases and Climatology in the Tufts College Medical School.

The importance to the community of an early recognition of pulmonary tuberculosis cannot be better expressed than in the following words of the illustrious Grancher:

"Ce diagnostic précoce, si important pour le malade, est au moins aussi important pour la société tout entière; car, au cours de la première de la seconde étape, le malade tousse très peu ou ne tousse pas, et est inoffensif pour son entourage. Traitée et guérie a cette époque la tuberculose cesse d'être contagieuse." [1]

If, as Philip, of Edinburgh,[2] after a thorough study of the subject, has estimated, the ascertained mortality from consumption in any city can safely be multiplied by ten in order to represent approximately the number of persons living already seriously affected, — and even twice that figure, he thinks, would be still below the mark, — then it is apparent that a very considerable number of cases remain undiscovered. Furthermore, a large proportion of the cases of tuberculosis which come under the observation of the physician or apply for entrance into a sanatorium are in a more or less advanced stage of the disease, as, for example, the proportion of rejected applicants at the Boston examining office of the Massachusetts State Sanatorium is about two thirds of all those who apply. It is evident, then, that a very large number of these undiscovered cases must be in the early or incipient stage of the disease, and the problem is, how to discover these hidden, early cases.

In the consummation of this desired end, certain obvious difficulties are encountered.

First: Failure or inability on the part of the physician to make an early diagnosis.

Second: Failure on the part of the public to appreciate the importance of an early diagnosis.

Third: Inadequate facilities for obtaining an authoritative examination of adults and children by means of free dispensaries and other agencies.

Fourth: Fear that tuberculosis may be discovered and, in consequence, one's occupation and, hence, livelihood may be sacrificed.

Fifth: Failure on the part of the nation, state or municipality to recognize its duty in the prevention and control of tuberculosis.

In the first place, the physician must be capable of making an early diagnosis, and so great is the prevalence of tuberculosis, and such the supreme importance of detecting it at the earliest possible moment, that I am convinced that special clinical training should be devoted to the subject in the medical schools, and my personal experience in teaching this subject for some years has only strengthened this conviction. Even with such special instruction in the medical schools, the practitioner will not become an expert without constant and continued experience, but he will at least be on the alert to *suspect* tuberculosis from such symptoms as are easily discoverable from a painstaking inquiry, and if, after such physical examination as he is able to make, he is still in doubt as to his diagnosis, he can refer the case to the expert.

The recent simplification of the tuberculin test by the cutaneous method of v. Pirquet or the ophthalmic of Wolff-Eisner and Calmette has now placed in the hands of the general practitioner an easy and apparently safe aid to the early recognition of tuberculosis, only, of course, however, to be used when the ordinary methods of examination fail. In many cases I believe the failure of the general practitioner to make an early diagnosis is due quite as much to a neglect of the means which he has at hand and knows how to use as to lack of skill in making a physical examination. When it is remembered that in so many instances the possible case of tuberculosis first consults his family physician, then the possession of reasonable skill in the early diagnosis of the disease and a keen appreciation of suggestive symptoms is not too much to require of any general physician.

The second difficulty is on the part of the public to appreciate the importance of an early diagnosis. How is any person who happens to feel indisposed, perhaps not enough so to seek medical advice, to suspect that his condition may be that of early tuberculosis and seek an examination of his lungs? Or, again, if he has a suspicion that such may be the case, how can he be made to realize the supreme importance of early diagnosis and treatment both to himself and to the public?

The general dissemination of popular tuberculosis knowledge by all the various methods now employed, such as exhibitions, lectures, literature, the public press, the influence of sanatorium graduates, the work of the visiting and school nurses, and the instruction of school children upon the subject now required by law in the public schools of Massachusetts, are all aiding in the solution of this problem. Indeed, it would seem that every individual, from all this reiterated teaching, might learn, or already has learned, the few simple symptoms which are indicative or suggestive of pulmonary tuberculosis, and the importance of early treatment. Such, however, we know is not the case. Consider the submerged tenth of the tenement-house districts; the newly arrived and ignorant immigrant in this country; the thousands of laborers and operatives who are so oppressed with their daily struggle for existence that they are oblivious of everything except their daily routine of work and sleep of exhaustion, so many of whom patiently toil on in spite of increasing weakness until the disease is past arrest. To such we must go and carry instruction and seek an examination. This, to a certain extent, the district visiting nurse already does whenever she has occasion to enter the homes of the poor, where a case of tuberculosis exists, by urging all the inmates to go to the dispensary for an examination. Very much could also be accomplished if a periodic examination of all mill or factory operatives was required and provision in sanatoria or elsewhere was provided by the management for those discovered to be tuberculous, as is already done, I believe, in some establishments in this country and abroad.

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* Read at the International Congress on Tuberculosis, Section V, Washington, D. C., 1908.

[1] Congrès International de la Tuberculose, Paris, 1905.

[2] Brit. Med. Jour., Dec. 1, 1906.

The more perfect way, and one which we may find necessary if we are ever to absolutely control tuberculosis, is a house-to-house inspection in the tenement-house districts and an examination of every inmate. An experiment of this kind has recently been made in one of the streets of Boston in a congested locality. Each household was visited by a physician, and each member of the family was examined as regards tuberculosis. By tact, patience and kindly address the good will of the inmates was gained and the opportunity obtained for making the investigation.

The third difficulty I have mentioned is lack of adequate facilities for free examinations. More free dispensaries are needed, particularly in the smaller cities and towns, and they must be so popularized and advertised that they will be eagerly resorted to by the working people. The trained visiting nurse, or investigator, is now recognized as an essential part of the equipment of such dispensaries, and it is obvious that the number of early cases discovered is greatly increased by this instrumentality, for the nurse, as I have before said, advises all the members of the families she visits to seek an examination; she is, indeed, the advertising agent and promoter of the dispensary.

By holding some of the clinics in the evening, a very important class of patients as regards early diagnosis is obtained, namely, those who do not feel ill enough to sacrifice a day's work or even part of a day in order to visit the dispensary. In the evening the workingman will feel more inclined to consult the clinic, even for what seems to him only a suspicion of disease, knowing it will entail no loss of time from his work and that the visit will be less conspicuous.

The fear that tuberculosis may be discovered and, in consequence, one's employment may be lost, undoubtedly deters many from seeking an examination, even though they may suspect that something is wrong with their lungs. This fact presents two serious and important social problems, the solution of which will materially aid us in obtaining larger opportunities for making an early diagnosis.

First: The public must be disabused of the idea that a consumptive is necessarly dangerous to those about him. On the contrary, it must be impressed upon the public again and again that a consumptive without sputum, as frequently occurs in the early cases, and one who properly disposes of his sputum, are both innocuous and are not to be shunned.

Second: The provision of proper occupation for such consumptives as are able to do some work for their support. Already this problem is in process of solution by means of farm colonies, etc., but until, however, a more general realization of this need exists and greater opportunities are afforded to meet it, many early cases will remain undiscovered, because the discovery now means, in so many cases, loss of one's occupation and hence loss of support for oneself and family.

Another field which offers fruitful results in the endeavor to make an early diagnosis is the examination of children, school children, for, in fact, in most civilized countries, all children, with comparatively few exceptions, are school children. Furthermore, I would extend such examination not only to school children, but to all students, for it is comparatively easy to deal with an organized body as a school, academy or college. There is nothing more pathetic than to be confronted with a case of advanced tuberculosis in a young student, where life might have been saved if the disease had been detected in its inception.

I would have a yearly examination of all school children and students, and, finally, an examination at the close of their school or college career, when advice as to the choice of an occupation would be of inestimable value to those who show evidence of a tuberculous tendency. If, as is now required by law in Massachusetts, for example, all school children are examined once at least in every school year to ascertain whether or not they are suffering from defective sight or hearing, it would seem to be equally important to require a yearly examination of their lungs, when one considers the prevalence of tuberculosis. Moreover, the machinery for doing this is already at hand in the medical inspection of schools, now quite universal.

Much is already being accomplished in the examination of children through various agencies. Notably is this the case in France, and no other country, to my knowledge, has so clearly recognized the importance of this phase of the tuberculosis problem or so comprehensively set about its solution. In my own city (Boston) we are working out the problem in the following way: The dispensary of the Municipal Consumptive Hospital devotes one clinic a week, on Saturday, which is a school holiday, solely to children. The visiting nurse urges the family in which a case of tuberculosis exists to send all the children to the dispensary for an examination. By means of circulars sent to clergymen, teachers and agents of children's societies, an urgent appeal is made to have all children under their supervision sent to the dispensaries for an examination. Thus we expect, and experience is already verifying our expectation, to secure the early recognition of many cases of tuberculosis in children which would otherwise remain undiscovered until more active symptoms developed in later life.

Finally, the nation, state or municipality can, officially, both directly and indirectly, promote the early recognition of tuberculosis, and, in most countries, much is being done in this direction, dependent upon an intelligent and lively appreciation of the nation's duty in the prevention and control of disease.

The state or municipality can establish free dispensaries and is already doing so. It has its laboratories for the free examination of sputum. It indirectly aids in the early detection of the disease by providing sanatoria for incipient cases and thus encourages the individual who fears he may be suffering from tuberculosis to apply for an examination, knowing that if he is found to be tuberculous an opportunity is afforded him for treatment. The nation can require that all its employees in the army, navy or civil service shall be periodically examined. The state can go farther and insist upon the examination of all operatives in workshops and factories before referred to. Massachusetts, for example, now requires that all factories shall be well lighted, well ventilated and kept clean; that cuspidors shall be provided; that there shall be proper sanitary arrangements; that medical and surgical appliances should be kept in all factories; and that proper egresses, fire escapes and fire extinguishers shall be provided. Why not extend this paternal care of its working people and require a periodic examination of the lungs of each operative, perhaps of equal value with these other requirements, when one considers the frequency of tuberculosis among workers? Moreover, such a requirement might, with equal reason, be extended to large department stores where many young women are employed.

Again, the state, by exhibitions and the dissemination of literature upon tuberculosis and other educative measures, can impress upon the public the importance of the early recognition of tuberculosis, with especial reference to the favorable results of treatment in the early stages of the disease. Thus it will be seen that official action can, and in many countries does, accomplish very much toward securing to its citizens an examination as regards tuberculosis, and can, by these various measures, cause it, in many cases, to be discovered in its incipiency, when cure is easy and the infection of others impossible.

The above are some of the difficulties, as I conceive them, in the early detection of tuberculosis, and I have endeavored to suggest some of the remedies.

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MEDICAL INSPECTION OF SCHOOLS FROM THE STANDPOINT OF THE MEDICAL INSPECTOR.*

BY JOHN T. SULLIVAN, M.D., T. J. MURPHY, M.D., AND M. J. CRONIN, M.D.,

Medical Inspectors of Schools, City of Boston.

The first system of medical inspection of school children in this country was inaugurated in Boston, in 1894, under the direction of the Board of Health, and to Dr. Samuel H. Durgin, Chairman of the Board, the pioneer in this work, is due all credit. After several years of patient endeavor, Dr. Durgin's wishes were finally realized, when, in 1894, under the administration of Mayor Matthews, an appropriation of $10,000 was granted for instituting the work. The city was divided into districts, and 50 physicians were appointed as medical inspectors of schools, at an annual salary of $200 each. The system was as follows:

A daily bulletin of all cases of scarlet fever, diphtheria and measles reported to the Board of Health was mailed to each inspector. His duty was to visit each case of scarlet fever and diphtheria not sent to the hospital and report upon the isolation. Upon receiving notice from the attending physician of the completion of desquamation, the medical inspector again made a visit and examined the patient and, if satisfied that desquamation had ceased, notified the Board of Health of the fact, recommended that the patient be released from quarantine and that the premises be disinfected. In the beginning, in cases of diphtheria, the medical inspector took cultures for release only when the attending physician refused to do so or abandoned the case. Later on, two consecutive negative cultures were required for the release of the patient and the medical inspector was required to take the final culture. Two years ago, visitation and report on the isolation of typhoid fever, tuberculosis and cerebrospinal meningitis were required, and these diseases were included in the daily bulletin.

The primary object of the school work was the detection of communicable diseases among the pupils. The teachers selected such children as seemed to them indisposed or showed some external sign of disease. The medical inspector examined these children, gave to the teacher his opinion and advice as to what should be done. The medical inspector has no authority in the schools, his position being merely advisory. Dr. Durgin was emphatic that no treatment be given to any pupil and that the medical inspector should in no way attempt to enlarge his private practice through his connection with the schools. One exception to the rule of no treatment exists, and will be mentioned later. In addition, the medical inspector was expected to be particularly cautious lest any action on his part should give offense to any practising physician. The actual work at present comprises:

1. Examination of all children entering the schools without certificates of successful vaccination.

2. Examination of and advice regarding all children referred by the teachers for any evidence of ill-health.

3. Contagious diseases. If a child is found in a schoolroom suffering from a contagious disease, the medical inspector closely observes the other children of that room for the next two or three weeks for the appearance of this disease; or, should it be discovered that several children attending a certain room are absent at the same time with the same contagious disease, an examination of all the children of that room becomes necessary. Should the medical inspector feel that disinfection of the room is necessary, the Board of Health is notified and proper action taken. Again, the chief medical officer of the

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* Read at the regular meeting of the Boston School Physicians' Association, Nov. 20, 1908.

Board of Health, Dr. Shea, may note an unusual number of contagious diseases in a certain locality; the school physician is then called upon to ascertain the distribution of these cases among the different schools in that district. That the system in this respect has been efficient is shown by the fact that while we hear of many schools, public and private, outside the city which are obliged to close on account of an epidemic of scarlet fever or diphtheria, such a condition has not occurred in Boston since medical inspection was inaugurated.

The exclusion and return of pupils is in the hands of the medical inspector, who is constantly consulted upon these points by the teachers. He can readily advise upon this question, since a part of his work consists in visiting the patient at home. Even though children in his school may reside outside his district, he can, if necessary, readily secure information from his associate who covers the territory in question. The law says:

" A child who is a member of a household in which a person is ill with smallpox, diphtheria, scarlet fever, measles or any other infectious or contagious disease, or of a household exposed to such contagion from another household as aforesaid, shall not attend any public school during such illness until the teacher of the school has been furnished with a certificate from the board of health of the city or town, or from the attending physician of such person, stating that danger of conveying such disease by such child has passed."

It might be mentioned in this connection that about 60% of all the cases of scarlet fever and diphtheria occurring in Boston are treated in the hospitals.

Upon receipt of the first mail at the office of the Board of Health, the chief medical officer is advised of all contagious diseases reported in that mail. Through long experience he can readily decide from the locality of the diseases reported whether they can be cared for and properly isolated at home or not. If from his knowledge he deems they cannot, the Board of Health machinery is put in motion and these cases are placed in the hospital and the premises disinfected before nightfall.

Therefore it would seem from the above that children attending schools, visited by one medical inspector and residing in the territory covered by another, present no great difficulty as regards the question of exclusion from or return to school.

One exception to the rule of no treatment by the medical inspector exists in cases of pediculi capitis. In 1896 the Board of Health ordered the medical inspectors to make a general inspection of all school children for this condition. A printed card was furnished by the Board of Health to be filled out by the master or teacher. It informed the parents that their child had been found by the medical inspector to be infected with pediculosis, full directions for treatment following. With this card was sent a prescription for crude petroleum. This card and prescription, by the way, have been omitted in the " Special Report on Board of Health Medical Inspection of Schools " in the annual report of the Superintendent of Schools for the year 1907 and 1908.

The following letter, taken from the annual report of the Board of Health for 1897, is of interest as showing how this action was appreciated.

" One master endorsing the work states:

" Now that we are through with the pedicular examinations in our district, I wish to say a word: Dr. ——, who examined our children, did his work faithfully, patiently and with tact. . . . The examination proved very popular with the parents. About 1,200 children were examined in my district. Not more than 25 or 30 parents made any objections. The children of these parents had infected heads and I have not found one parent who did not think it wise to have all children's heads examined except their own. My general judgment is that all parents, except a minority, so small in number as to have little or no weight, want the examinations continued at proper intervals. While many children have felt mortified when found infected, the movement has been considered one of education. The next time the plan is tried there will be but a minimum of friction. The children are very much cleaner in other ways, and look and feel better. They cannot help enjoying more physical comfort. My object in writing is to strengthen the hands of your Board in creating what I hope will prove a permanent plan which, from my observation and experience and in the judgment of nearly all parents, has been too long delayed. As a teacher, parent and citizen I hope the good work so well begun will be continued.

" Very respectfully yours,

" Principal, ——— School."

The attention of the medical inspector is sometimes called to poor sanitary and other bad hygienic conditions in the schools. The Board of Health is notified, investigates and reports its findings and recommendations to the school authorities.

At the outset the medical inspector was an unwelcome visitor in the schools in many instances. Masters and teachers regarded him as an unnecessary intruder. Persistence and patience on the part of the medical inspector, however, finally convinced the teachers of the necessity and value of the work, so that the system originally instituted to detect contagious diseases has so broadened in its scope as to include all matters pertaining to the physical well-being of the pupils.

Hence the work originated by Dr. Durgin and carried out by his appointees at an inadequate salary has proved its necessity and by its results attracted widespread attention both among hygienists and educators.

Notwithstanding the good work done by the original system, it was recognized on all sides, and particularly by the medical inspectors themselves, that the system was not complete in all its details. Pupils were examined and advice given to the teachers, who notified the parents of the diagnosis and of the measures to be adopted for relief. In many instances the parents took no notice of the suggestions made. As a result of this, and by reason of the fact that no treatment was allowed, it was felt some time ago that the medical inspectors' duties should be broadened and that nurses subordinate to and under the control of the medical inspectors should be employed.

Nurses in the public schools were first utilized in New York and proved a success. In Boston the health appropriation did not allow of their introduction by that department, though advocated by Dr. Durgin. A few years ago, to demonstrate the value of such assistance, the Instructive District Nursing Association placed two nurses in the schools, one in the West End and one in the South End. Their work was such that the commission appointed by the Boston School Committee in June, 1906, to report on matters relating to the health of school children, endorsed it highly and recommended their general introduction. In 1907 the Boston School Committee obtained authority from the legislature to expend annually the sum of $30,000 in the employment of nurses, who were placed under the direction of the Department of School Hygiene, created in the same year.

We now come to the considerations of the results of the first year of medical inspection of school children by the combined method of physicians, under the Board of Health, and nurses, under the Department of School Hygiene. The original idea of having nurses in the schools to supplement and render more efficacious the work of the physicians has not been wholly realized because each division, subject to a different head, has worked along divergent lines, only acting together in isolated instances. By virtue of this disconnected state of affairs the present system of medical inspection in the Boston schools is faulty and inefficient on account of its duality and divided responsibility. The rules of the School Committee state: "It shall be the special duty of the assistant nurses to assist the medical inspectors assigned to the public schools and to see that the directions given by the inspectors are carried out."

If there was a strict observance of this rule, with nurse and doctor subject to the same authority, it is easy to see that we would have a system of school inspection of the first order. Unfortunately, however, such is not the case. The medical inspector receives no report on cases referred by him to the nurse for some particular object. The nurse may carry out the suggestion of the medical inspector, but her report is made to the supervising nurse at school headquarters. The medical inspector only hears of these cases through his accidental meetings with the nurse or through the teachers. Furthermore, in many instances, the nurse goes into the schools, steps into the domain of the physician, makes diagnoses, advises treatment and excludes pupils without even referring the cases to the medical inspector.

In addition, a new responsibility hitherto nowhere allowed has been given to the school nurse: while the medical inspectors are not allowed to treat any child, the nurses are supplied with a complete armamentarium for doing minor surgical dressings, and, according to the report, during the last year, 29,017 dressings were done by the nurses. This would be all very well if the nurses were immediately directed by physicians, as they should be, when they apply treatment.

In the superintendent's annual report for the past school year, it says of the nurses' work: "The work accomplished during the year 1907–1908 is set forth in detail in Table B." Table B is entitled: "Nurses' Statistical Record of Boston Public Schools." We shall consider a few of the statistics contained therein. "Pupils inspected for pediculosis, 43,036; number found, 12,909." The number found by the medical inspectors was 4,181. As previously mentioned, this work has been done by the medical inspectors. Now it would appear that the nursing division is to assume that responsibility, which we consider unwise, since it is not the province of a nurse to make a diagnosis, no matter how simple or easy of recognition the condition may be.

Nurses are not trained in the making of diagnoses, physicians are, and to them should be assigned the responsibility. In almost every disease in the nurses' record, the number reported is far in excess of that reported by the medical inspectors. As we are obliged to draw our own conclusions, since no explanation is given, we must infer that either the nurses themselves made a very large number of diagnoses of tuberculosis, typhoid fever, syphilis, scabies, impetigo contagiosa and other diseases, or for some unexplainable reason these cases were taken to hospitals or dispensaries for diagnosis. If the first conclusion is correct, the nurses have overstepped their province; if the latter is the case, it should not be, since the medical inspectors always stand ready to examine all pupils. Two hundred and thirty-two cases of tuberculosis appear on the table. It would be interesting to know what was done with these cases. The medical inspectors report 32. Twenty-four cases of rachitis are reported in the nurses' record; the medical inspectors saw none. We were unaware that rachitis as an active disease existed much after the age of two years.

Seven hundred and eighty-seven cases of diphtheria and 1,000 cases of scarlet fever are recorded in this table, while the medical inspectors saw but 28 and 45 cases respectively. Just what these figures mean we are unable even to conjecture.

The following from an article in the Boston *Transcript* of July 28, 1908, entitled "Healthy School Children" is apropos. It says:

"In no one year since 1894 had the medical inspectors of the Board of Health reported more than 77 cases of diphtheria among school children, or 31 cases of scarlet fever; in less than five months following Sept. 11, 1907, the nursing division discovered 392 and 407 cases respectively." Inquiry at the office of the Board of Health shows no record of such a number of cases of contagious diseases found in the public schools of Boston during that time. Furthermore, how could the nurses have any connection with so many cases of diphtheria and scarlet fever, since one of their rules reads as follows: "The nurses shall visit excluded pupils at their homes, provided that such visits shall not be made in cases of smallpox, scarlet fever, diphtheria, measles, whooping cough or mumps."

The nurses' report says 8,542 pupils were excluded. The medical inspectors advised that 4,905 pupils be excluded. We must infer, then, that upon their own responsibility the nurses excluded some 3,607 children. Cases referred to family physicians and hospitals are 9,648 and 9,715 respectively. Here also is another instance of nurses exercising the rôle of a physician, since it does not state that the referring of these cases was authorized by any physician. Pupils inspected for pediculosis, dressings, pupils escorted to hospitals and visits to homes are the only things specifically stated as having been done by the nurses.

The balance of the report, comprising a long list of diseases, with the number of each, is without explanation as to the authority for recording them. In the nurses' record no mention is made of cases referred to them by the medical inspectors or of work done at their suggestion. The medical inspector as a factor in the nurses' work is entirely ignored, other than the following statement: "The co-operation of the Department of Medical Inspection under the Board of Health and the nursing division under the Department of School Hygiene has been cordial and effective." The foregoing analysis of the nurses' report has been rendered necessary on account of the newspaper articles which have appeared from time to time during the past year extolling the more thorough and effective school inspection under the nursing division as compared with the past work of the physicians, as also on account of the figures presented in the annual report of the nurses' work, which leaves it to be inferred that the old corps of medical inspectors is of no importance in the new régime. That the work of the nurses has not been of value, far be it from us to imply, but undirected by physicians in the field we have grave doubts as to its reaching its fullest degree of efficiency.

Dr. Luther Halsey Gulick, Director of Physicial Training, New York Public Schools, and Leonard F. Ayres, General Superintendent of the Schools of Porto Rico, 1907–1908, have recently published a book on "Medical Inspection of Schools," which contains all the available information on the subject. Of interest to us is the following account of the work of the school nurse in Philadelphia by Dr. Cornell:

"The efficiency of these nurses depends largely upon their personality. As a rule, in foreign poverty-stricken sections, they are invaluable. It does not appear that their sphere would extend beyond the home visiting for the purpose of urging treatment in the other sections of the city." We feel that this statement holds good for Boston.

In addition, Dr. Cornell says: "In those schools visited by both the medical inspector and the nurse, the nurse is subordinate to the medical inspector. The method of action and record in these schools is for the medical inspector to leave the small blue cards, each containing the record of some child's physical defect, for the nurse's enlightenment. The nurse sends for the children by means of these cards and either treats them at the time or makes a note of home visits required."

In *Charities and the Commons* for Nov. 7, 1908, is a review of Gulick's and Ayres' work by L. L. Dock, who says: "The nurse is the proper person to observe symptoms and report them to the physicians. It is for this that she has been trained. Although the authors report favorably upon the work of the public school nurse, where it exists, and quote Dr. Newmayer, of Philadelphia, as calling her 'the most important adjunct to medical inspection,' they yet do not make it sufficiently clear that a complete or model organization of medical inspection is impossible unless it includes the nurse. There are ample proofs that it was the practical personal work of the nurse that drew public attention and sympathy to the medical work in the public school and vitalized the hitherto perfunctory routine of medical inspection and exclusion of infectious cases. This being true, the authors might well have given a little more carefully the history of the establishment of public school nurses in New York City, where their successful demonstration was first made and whence the impulse has radiated to other places, and it would have seemed fitting to record in this first general history of medical inspection the distinguished part taken by Dr. Lederle, then commissioner of health, in this movement, and the useful service of Miss Lena L. Rogers, who after making a successful experiment enjoyed the honor of being the first municipally appointed public school nurse, not only in this country, but in the world."

CONTROLLING AUTHORITIES.

Gulick and Ayres, in a chapter under this heading, discuss this question as to whether medical inspection should be under the control of the board of health or under the school authorities. Their conclusions in brief are:

(*a*) Medical inspection for the detection of contagious diseases may well be a function of the board of health.

(*b*) Physical examination for the detection of non-contagious defects should be conducted by the educational authorities or at least with their full co-operation, because they are made for educational purposes.

(*c*) The records of physical examinations must be constantly and intimately connected with school records and archives.

(*d*) They do not need to be connected with other work of the board of health.

All the school authorities whose opinions are quoted in this book advocate school control and consider medical inspection should be a part of the school economy, thereby avoiding divided authority, dual responsibility and friction, which they hold must ensue from a system under the control of the board of health.

When we consider that the board of health is the supreme authority and sole arbiter in all things pertaining to the health of the community, this contention does not appear well founded. Even if the system should be under school department control there might arise conditions, when, because of its supreme authority, the board of health must step in and assume control.

School department control over the child is limited to the school, whereas the board of health has surveillance over the physical well-being of all, wherever they may go in the municipality, whether in the home, the street, the store, the factory or workshop, the public conveyance, the places of public assembly, including the schools.

Medical inspection under school department control cannot supply the so-called hiatus in the present system and enforce medical care upon children found to have physical defects as effectively as can the department of health. In the *Transcript* articles, we find the following: "The period of unrecognized convalescence after the contagious diseases and the consequent neglect of these children are busy supplying candidates for the Perkins' Institution for the Blind and furthermore are the cause of many of the heart and kidney complications so commonly found." This assertion is not in accord with facts, since the above-mentioned complications of the contagious diseases occur, if at all, during the height of these diseases and not some time later. As previously stated, over 60% of all cases of scarlet fever and diphtheria occurring in Boston are treated at the South Department of the Boston City Hospital. In scarlet fever, every patient remains in the hospital at least fifty days, at the end of which time the possibility of all complication has passed. If any complication has occurred during the course of the disease, information of the fact is given to the parents when it occurs and also at the time of discharge, when advice as to further treatment is given and the request made that the patient return at a certain time for further examination and advice. Heart complications in diphtheria are carefully watched for in this hospital and every patient is kept in bed a sufficient length of time to allow for their appearance. In the severe cases these complications occur very shortly after the disappearance of the membrane. In the milder cases, after two weeks or thereabouts in bed, if no heart complication appears, it is safe to allow the patient to sit up. In cases of post-diphtheritic paralysis, heart complications do occur, but in this event the patient is in no condition to attend school. As to contagious diseases treated at home, it is safe to say that both parents and attending physicians do their duty by the patient and no unrecognized convalescence can exist. No case of scarlet fever will be released from quarantine in less than four weeks; the majority stay longer. In diphtheria, two negative cultures for release are a sufficient safeguard.

The board of health must continue its medical inspectors for the purpose of overlooking contagion in the home or elsewhere and it does not seem practical in that event for the school authority to maintain another independent set of inspectors for the school work.

The prevention and care of contagion in the school or in the community at large cannot be divorced from the department of health, and since any system of school inspection must include this feature, it is obvious that the search and remedy for non-contagious defects are closely related to the former and should logically be under the direction of the department of health. Daily clinics in the schools seem to us unnecessary and objectionable, since schools are for education and should not have the semblance of a dispensary.

Dock, in his review of Gulick's and Ayres' book, says, in this connection, "In dealing with the question of control, the authors display a certain impatience with health boards. The arguments for control by the educational authorities are given much more fully than those in support of health boards, and yet the natural advantages of the latter bodies in promoting sound systems of medical inspection are great, as was pointed out in a set of memoranda presented to the committee for the study of the physical welfare of school children in New York City in 1908. The memoranda referred to advised divided control to this extent: For educational departments, everything relating to hygiene, both as to the child and his environment, rooms, seats, light, etc.; for medical boards, everything relating to curative and corrective treatment, not only so far as contagious diseases were concerned, but also to the ultimate extent of complete physical examination. This would seem to be the most rational division of responsibility."

Therefore it is evident that a system of medical inspection under the control of the school department would be somewhat limited and could not be so far reaching and effective as that conducted by the board of health. Consequently, it is clear that, viewed from the standpoint of preventive medicine, medical inspection of school children is essentially the work of a department of health.

A word as to some matters concerning the physical well-being of school children which have received but scant notice during the agitation for an improved medical inspection. The schools are overcrowded and "the portable," a small wooden building, has been placed in many school yards. It is to be regretted that all the children attending the schools cannot be housed in suitable buildings. Classrooms exist in many basements, where light is poor and ventilation bad, and where, very often after the recess, the odor from the toilets permeates the atmosphere. Classes are placed in some instances in corridors. If for any reason the thousands of children now attending sectarian schools should demand admittance to public schools, it is easy to see what confusion would ensue.

Many schools are oftentimes overheated, and in others there is no proper system of ventilation. Lighting is poor in many schools and causes eye strain to prevail, as shown by the recent sight tests. Gas as a means of illumination is bad, as it uses up much oxygen. There is a rule which calls for washing of windows only twice a year, in April, and in the early fall. It would be better hygiene to have the windows washed whenever necessary, as clean surroundings are essential to good health. Since the eradication of causes is sought, why not begin with the fundamental causes, viz., the conditions just mentioned, which concern the pupils' physical well-being, particularly in the primary grades. Signs of fatigue among children, as shown by yawning, nervousness and lolling on desks, are due in all probability more to faulty heating and poor ventilation than to physical defects in the children themselves.

Since the aim and object of any system of medical inspection of schools is to discover and remove all causes tending to lessen the full mental and physical development of our youth, then why should not the services of the nursing division, as well as the board of health inspection, be extended to include all schools, public and private. The health of the community and the physical upbuilding of the whole population is the concern of the state, and any movement to improve the welfare of school children should be made to include parochial and other private schools as well as the public schools, as a strong mental and physical development of the individual contributes to the strength of the state.

Although Boston is the pioneer city in the establishment of medical inspection of school children, it is obvious to all concerned that its system has many defects. To remedy the inefficiency of the present system we would recommend:

1. That the whole system of medical inspection, including physicians and nurses, be placed under the control of the Board of Health.

2. That a chief medical inspector be appointed, with deputies, if necessary, to have full authority over all, his function being to direct and control the work of the district inspectors and to see that each performs the duties required; also, through a supervising nurse, to direct the work of the nurses.

3. That the medical inspectors' powers be definitely determined and specifically set forth and that a proper compensation be given.

4. That the nurses be subordinate to the district medical inspectors and work only under their direction.

5. That a card system of records be devised, to be filled out by both physicians and nurses, one set to be kept at the schools and another set at the office of the chief medical inspector.

6. That the Board of Health and the School Committee co-operate in bringing about such needed reforms.

We feel confident that a system carefully prepared along these lines would prove ideal.

OBSERVATIONS ON EPILEPSY.*

BY EVERETT FLOOD, M.D.,
Superintendent, Massachusetts Hospital for Epileptics.

THIS paper comprises observations resulting from the care of nearly 1,500 cases of epilepsy at the Massachusetts Hospital for Epileptics during a period of nine years. Results are noted and compared with those of observers elsewhere, for example: Deathrate, blood pressure, diagnosis of mental diseases, diagnosis of nervous diseases, age at onset of epilepsy, heredity in epilepsy, predisposing causes, estimation of number of epileptics in Massachusetts, number of persons who can help themselves, kind and amount of work, trauma, diet, etc., and some general remarks.

The main question of the need of the epileptic (what care is best for him, the general plan of separation from the insane, work, school, play, etc.) has been broadly discussed and was practically settled some years ago. We have still, however, a multitude of details to arrange.

The good done by such a place of retreat as the state hospitals furnish is illustrated by individual cases. It often happens that persons are free from attacks while residents in the hospital. Parents are at their wit's end to know how to care for a spoiled or refractory epileptic child. All calm and quiet is out of the question. Even the entire neighborhood is disturbed. The hospital takes this patient and at once all is calm. The person does not try to impose upon the more experienced caretakers here and is a little awed by the new surroundings, while the home settles down to quiet. An instance of a girl who had been the sole care of her entire family for years recently came up. She was more or less spoiled, though possessing a naturally mild and lovable disposition. If any noise occurred in the vicinity the family had thought only of a possible fall of this girl. There was a strained and careworn attitude all the time. The whole situation was improved by the removal of this patient to a hospital for the epileptic. She was herself far better off, was not discontented, but was hopeful of recovery and helped by her associations. She could attend religious services, entertainments, even dances, and soon formed a number of congenial associations. The family simply relaxed and would on no account return to the former pressure. We may also note the good done to the patient himself by regularity of life, work, diet, etc., the discipline, the freedom from fits, contentment (which is the rule), appreciation (which is often met) and many other advantages.

It is well to keep in mind, however, that a large number of epileptic persons are suitably cared for at home, and there is no doubt in many instances that a family properly situated, with judgment and right medical advice, can do better for their own afflicted member than any sanitarium. When the patient comes to the hospital facts are sought by written and verbal questions from the patient and family, both on admission and subsequently, as to all the points so far as we recognize the need. Blanks are printed for this purpose. The admission papers are required by law to give a few of these facts. Our questions are designed to elicit the balance.

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* Read at a meeting of the Boston Society of Psychiatry and Neurology, Feb. 20, 1908.

I shall try to present briefly and only in part the view of the pathologist, the view of the medical director, the view of the business manager.

Scarcely a measure can be classed under only a single head. Almost all the considerations must come under one or more of the subdivisions. If the same man is at the head of all the departments, under the trustees he may with intelligence and justice so administer as to bring out the best results from any one line of action whether this comes under one or all of the subdivisions. I must be pardoned if the psychiatrist and neurologist find that positive opinions are offered more from the point of view, of the business manager than from that of either of the other two divisions. A large amount of data collected during a period of many years is so far complete that we need not waste time in verifying it. These points should be stated by some competent collection of students in this and allied lines and then attention centered on other topics until some of them can be passed over to the list of settled matters.

For further observations we have an endless list, some no doubt well on the way to fairly well-defined conclusions, many not at all so; and some new queries all the time rising as to, e. g., frequency of biting the tongue, precordial pain, forms of auras, psychic and automatic manifestations, mania existing before and after the fit, transitory mania, the heart which slows at the onset of the fit then increases, paleness, — probably occurring for even a brief time, — then flushing and congestion even to blackness, the condition of the pupil which generally dilates as the fit comes on, relation of eye strain to epilepsy, etc. Much work has been done and observations are still being made. Our records furnish data readily tabulated for such results and the same lines of work can be found wherever epileptic persons are cared for. A committee of the National Association has been appointed and is now at work to advise the isolated worker and to systematize the study of epilepsy. They will bring about uniformity. We hope to have opinions which will turn us to biochemistry, pathology, serum therapy, opsonins or some other research or set us again plodding on our way attending to the homely comfort of each case. Dr. E. E. Southard, Dr. L. P. Clark and Dr. Adolf Meyer are the members of this committee. Preliminary work has already been done and a plan of procedure arranged. With the prospective increased laboratory facilities at the Massachusetts Hospital for Epileptics, a line of further research will be arranged there and original work may be hoped for.

The use of the word "fit" is authorized by the Standard dictionaries. Attack, seizure, etc., are much used. The patients themselves almost always say "spell." Gowers uses the word "fit" often; Spratling, sparingly; Turner, freely, and Hare uses it very little. I see no reason why this short expressive word should not be the one to use in most instances when an epileptic attack is meant, whether of one kind or another.

In the matter of diagnosing mental diseases we meet with one common condition. A particular mental condition is suggested by the appearance of a patient and we begin to follow out the scheme for that class. After a little we find that the essential thing is missing and that instead of finding a dementia precox or paranoia or even manic depressive type or general paralysis, as we have been led to think possibly existed, we gradually lose links here and there and finally have to conclude that we have no special type but a dementing condition which obliterates all types. The mental condition accompanying mild attacks generally proves more rapidly dementing than those accompanying the grand mal type of fit. We have a large number of cases now in the hospital which have been subject to the most racking and violent seizures for years occurring at frequent intervals, but the mind is still fairly clear; it must be allowed, however, that many such cases are fully demented. On the other hand, there are a very few cases suffering from a large number of seizures where the mind long persists. Very rapid dementing is the rule, though this sometimes holds off a good many years. The diagnosis of the nervous or mental disease has been determined in nearly all cases for the last two years.

As a sample of diagnosis I cite the following work furnished from the notes made by Dr. Hodskins:

In this series are 1,172 cases, 646 males and 526 females. Of these, 72, or .614%, have some organic lesion of the central nervous system, 40 among the males and 32 among the females. In 55 the lesion was hemiplegia, 29 males and 26 females. Various causes were given for the onset of the paralysis, such as protracted labor, instrumental delivery, blows on the head, digestive disturbance, whooping cough, scarlet fever, measles, inflammation of the brain, and in one case vaccine was the reported cause.

The usual history elicited is that the child had a series of convulsions caused by some one of the above causes, and when the convulsions ceased, the child had hemiplegia. In these cases there is a question as to whether the epilepsy or the hemiplegia came first. But no one questions the fact that the cerebral injury causes the persistence of the convulsions. In a few cases the hemiplegia appeared first and the fits followed after a longer or shorter interval. In the cases with this history the shortest time between the hemiplegia and the first fit was two days; the longest was six years.

In the cases in question, the average age at the onset of the hemiplegia was 2.8 years for the total number of 54 cases, the average age for the males being 2.4 years and the females, 3.92 years. In only one case did the hemiplegia actually date from birth, the reported cause being instrumental delivery. In the case of one woman the onset was at the thirty-fourth year. The right side was affected in 28 cases, the left in 26. In the males the right was affected in 16 cases, the left in 13; in the females, the right in 12 cases, the left in 13. The condition of the paralyzed parts was found to vary considerably. In some the recovery was nearly complete, in others the limbs were stiff and awkward. As a rule the face recovered more completely than the arm and leg, and the leg more than the arm. In most cases the tongue had recovered completely. The limbs that had suffered from the paralysis were in every instance smaller than the unaffected ones. No disturbance of sensation was noted. In a few cases the so-called post-hemiplegic chorea was found. It seems to me that this condition is found most often in cases where the paralysis may have been caused by inflammation instead of vascular accident. Athetosis was present in a few cases, and the above statement as to inflammation seems to apply to this also. In one male and one female associated movements were present. The convulsive attacks vary widely in this class of cases. Most patients have both petit and grand mal seizures. They may also show Jacksonian symptoms, particularly when in status epilepticus, which seem extremely liable to develop at regular intervals, having at such times from 30 to 200 attacks in a series.

Among other organic causes found was acute anterior poliomyelitis in two cases, one of either sex; 1 of brain cyst; 2 of brain tumor and general paresis; 3 widespread sclerosis of the spinal cord, probably due to syphilis; 1 of locomotor ataxia, which developed about eighteen months prior to the epilepsy (probably syphilitic); 2 of Little's disease, one male and one female; 3 of probable disseminated sclerosis, in which fits were the first symptoms noted; 1 of hydrocephalus; 1 of muscular atrophy and 1 of combined sclerosis.

Aside from the use of drugs, I offer from our experience some suggestions for treatment, such as gymnasium work, swimming, bowling and other exercise movements. A warm drink before getting out of bed in the morning, massage of the abdomen, high rectal injections, the electric light cabinet, electric applications, hydrotherapy, care of diet, discipline, a regimen, are all useful measures. The opportunity for psychic treatment is definite in dealing with hospital cases of epilepsy. The effects are always good and not so transitory as we might at first expect. Patients remember well lessons and suggestions, especially if the treatment conduces to idleness. The advantages of religious instruction rightly encouraged has been a reliance of the common type of family. Of course this is generally unwisely managed, but its possibilities for good when judiciously handled should not be despised. The early care of susceptible cases as a prevention of epilepsy is also to be thought of, and I am sure much good can be done, though preventive work ought to begin at the beginning wherever that is found possible.

To run into all sorts of vagaries in trying to treat our patients would be unbecoming a rational man, and ridiculous, but to despise or lightly esteem any honest attempt which may do good either from suggestion or otherwise would be a pity in dealing with these classes of cases. We can, however, scarcely question the wisdom of the statement that the way to cure epilepsy is to prevent it, and we must be satisfied with a small per cent of recoveries in developed cases. In connection with treatment it is often of interest to investigate the advertised medicines which come to our attention. We have made a collection of these, with analysis of some samples. The field is a very discouraging one and reveals little but mercenary elements. The amusements and treatments may be made a reward for regular work. Some inducement is needed, as almost all such persons are opposed to physical effort unless it be combined with sport. The day should be divided up in a systematic manner occupying every minute of it in all cases where the mind is well enough to allow.

A special consideration is the treatment of status and I may be pardoned for briefly reciting our usual plan. This has come from much experience and must even now be modified according to the case and the conditions. Often it is best to wash out the stomach; give high rectal injections of copious water elements, sometimes a 1, 2, 3, enema (Rochelle 1, glycerine 2, water 3), apomorphia $\frac{1}{20}$ (hysterioid); 60 to 100 gr. bromide, by feeding or rectal tube; bromide 120, chloral 20, morphine $\frac{1}{4}$ or tr. opium; sterile bromide 30 gr. to 1 oz. water hypodermatically; the hot pack. When the fit ceases, watch the heart and stimulate with strychnia $\frac{1}{120}$ to $\frac{1}{20}$, repeated as needed. Watch the temperature which tends to enormous and fatal heights. Watch lungs for edema.

The following statistics as to heredity in epilepsy are based on an analysis of 1,200 cases. One hundred and eighty-five of these gave a history of heredity; 98 were males and 87 females. This gives a heredity of 14% for 700 males, 15.4 for 500 females and 15.41 for the 1,200. Of the 98 male cases, in 42 the heredity came from the mother's side, in 34 from the father's side, in 6 from both sides; 16 of the 98 males had brothers or sisters who were epileptic. In 30 of the 98 cases the heredity comes from the mother directly, the hereditary taint being, insane, 5; epileptic, 5; migraine, 12; hysteria, 4; neurotic, 4. The hereditary taint came from the father's side in 19 cases as follows: insane, 6; epileptic, 7; migraine, 2; neurotic, 4. In 4 the heredity was from both father and mother. The first case the father was neurotic, mother migraine; second case, father migraine, mother migraine; third case, father migraine, mother epileptic; fourth case, father neurotic, mother migraine and in the remainder the heredity came by the collateral branches of the family, as by the uncles, aunts, grand-people, cousins, etc.

The age at the onset of epilepsy was as follows: 41 under ten years, 31 between ten and twenty years, 10 between twenty and thirty years, 5 between thirty and forty years, 4 between forty and fifty years, 4 between fifty and sixty years, 1 between sixty and seventy years. In the 87 female cases, in 40 the evidence of heredity came from the mother's side of the family, 23 from the father's side, in 3 from both father and mother and in 12 cases from the brothers and sisters. In 28 cases the heredity taint came from the mother herself as follows: insane, 5; epileptic, 13; migraine, 5; hysteria, 2; neurotic, 3. In 12 the heredity was from the father directly as follows: insane, 3; epileptic, 3; migraine, 3; neurotic, 2; general paresis, 1; chorea, 1. The three cases from both sides were as follows: first case, father migraine, mother migraine; second case, father insane, mother insane; third case, father migraine, mother migraine. In the remainder of the female cases the heredity was from the collateral branches as in the males. The age at onset of epilepsy in the females was as follows: 40 under ten years, 31 between ten and twenty years, 10 between twenty and thirty years, 4 between thirty and forty years.

The percentage with hereditary history given by different authors is as follows: Echeverria, 306 cases, 25%, R. Reynolds, 38 cases, 31%; Moreau, 364 cases, 32%; Aronsohn, 508 cases, 32%; O. Berger, 71 cases, 32.3%; Binswanger, 150 cases, 36.3%; Gowers, 2,400, 40%; Spratling, 1,070, 56%; Dejerine, 350, 66.8%. The records have been examined as regards the heredity in uncles and aunts, grandfathers and grandmothers, and the following table has been compiled, leaving out the cousins. Maternal grandfather and grandmother, 4 cases of epilepsy, 2 cases of insanity. Paternal grandfather and grandmother, 6 cases of epilepsy, 1 insane, 1 neurotic. Maternal uncles and aunts, 10 cases of epilepsy, 6 cases of insanity, 2 neurotic. Paternal uncles and aunts, 8 cases of epilepsy, 3 cases of insanity, 1 neurotic. The above results were obtained from among the females.

Among the males, maternal grandfather and grandmother, 1 epilepsy, 1 insane. Paternal grandfather and grandmother, 2 epilepsy, 2 insane. Maternal uncles and aunts, 13 epilepsy, 4 insane, 1 organic nervous disease. Paternal uncles and aunts, 6 epilepsy, 3 insane, 1 organic nervous disease. The total number of cases obtained from both male and female is as follows: 50 epilepsy, 22 insane, 4 neurotic, 2 organic nervous diseases, making a total of 78 hereditary diseases.

A later condensation of results is also given. Direct heredity is the same disease in blood relations. Indirect is alcoholism, insanity and migraine in blood relation. There are not more than 6 cases of migraine. Among the males the direct heredity is given as 29 cases on the father's side, 24 mother's side, 5 brother's side, 10 sister's side. Indirect heredity: father, 19 cases; mother, 21; brother, 1; sister, 2 cases. Among the females the direct heredity is 16 cases on the father's side; 25, mother's; 4, brother's; 6, sister's. Indirect heredity: father, 14 cases; mother, 15; brother, 3; sister, 4 cases.

Statistics from other sources are as follows: Hare, number of cases and per cent. very indefinite; Gowers, 2,400 cases, 40%; Spratling, 1,070 cases, 56%; Turner, number of cases unknown, 43%; Massachusetts Hospital for Epileptics, 1,172 cases, 14.04%.

The wide differences in these figures are explained from the fact that each observer has his own standard of what constitutes an inheritance. This point should be settled for us by our committee and a unity of terms and records established.

The kind and amount of work of which epileptic persons are capable has been variously estimated. The conclusions drawn appear to be arranged to suit the notion of the writer. I believe we have been misguided to an extent and that we must more fully recognize the invalidism of almost all such cases, especially of institution cases. The valetudinarianism of the epileptic is a theme of never-ending remark where masses of them are segregated.

It is not here worth while to discuss the matter fully. The idea is merely to recognize the inefficiency of such workers, the need of paid supervision and the actual value, which is often considerable, of the work done and especially of the value of work to the patient himself. As to recoveries and what we may expect in this direction, a few remarks may be permissible. When we speak of recoveries in epilepsy, we mean a case that has been free from fits for at least three years and that has returned to a normal state of mind. I would not class an insane person or one clearly feeble-minded as recovered, even if the fits ceased, without special mention of the permanent mental state; the fact would be noted as that of a person who no longer has distinct epileptic fits.

The percentage of recoveries in this state is not accurately determined. Of all persons who develop epilepsy, allowing fits in general to be epilepsy, at least 50% cease to have such convulsions and may thus be classed as recovered. Out of the cases that become well established, having a large number of seizures, the disease lasting for some years, at least 20% recover. This occurs among younger epileptics. Of the confirmed cases taking care of themselves in a community and being epileptics of long standing, about 5% recovered. Of the cases in the hospital at Palmer, most of whom have suffered mental impairment and who have had epilepsy for years, about 1% have recovered. The possibilities of recovery are good in certain cases.

(To be continued.)

SHALL THE TUBERCULAR PATIENT BE TREATED IN THE HOME CLIMATE OR SENT TO SOME REGION WITH A MORE EQUITABLE CLIMATE, WHERE MORE HOURS CAN BE SPENT IN THE OPEN AIR WITH LESS DISCOMFORT?

BY ISAAC WILLIAMS BREWER, M.D., BOSTON.

For many years climate was considered to be the all-important point in the treatment of tuberculosis. So greatly was the profession impressed with the value of the climatic treatment that as soon as a diagnosis was made the patient was hurried to some distant region that was reputed to cure the disease. In most cases the physician ordering the change had but a hazy idea of the climate to which he was sending his patient, and in almost all cases he was ignorant of the hardships that the invalid would have to endure. No attention was paid to the condition of the patient, so great was the haste to get him to the promised land that would restore his health.

The results of this thoughtless and ill-advised movement of tubercular patients were anything but encouraging. Some few recovered, many dragged on for a short time, their end being hastened by the hardships of their new surroundings, while not a few died en route to the promised land.

One of my earliest recollections is connected with this question. At one time in the early seventies my father was stationed at a military post a few miles west of the highest point on the Union Pacific Railroad. Three miles from the fort was a small frontier town. Many and many a time have I seen the local undertaker's wagon at the depot to take off the body of some health seeker who had died in crossing Sherman Pass.

With the growth of the sanatoria and other methods of obtaining outdoor life in the East, there has been a change of opinion in regard to the value of climate and altitude in the treatment of tuberculosis. Institutions like the Adirondack Cottage Sanitarium have reported such good results that not a few physicians have concluded that the disease can be successfully combated in any climate provided the patient lives in the open air. The writer, while acknowledging the splendid results obtained in the eastern sanatoria, still believes that, all things being equal, better results can be obtained in the arid region than in the cloudy and humid atmosphere of the Atlantic states. After a year spent in the East this opinion has been greatly strengthened.

Dr. Osler, in discussing the subject of climate in the treatment of tuberculosis, says," The requirements of a suitable climate are pure atmosphere, an equable temperature not subject to rapid variations and a maximum amount of sunshine. Given these three factors, and it makes very little difference where the patient goes so long as he lives an outdoor life."

Where in the United States do we find a pure atmosphere, equable temperature and maximum amount of sunshine? Surely not in or around any of our large cities in the East.

There can be but little doubt that the arid region of the southwest excels in purity of its atmosphere. There we find very few factories and other industrial establishments belching impurities into the air. Most of the impurities in our atmosphere are placed there by man or his instruments of labor. In Arizona the last census showed less than two persons to the square mile. The clearness of the air is so great that I have often seen buildings at a distance of eighteen miles and even further, while in the vicinity of Boston there are few days when my horizon extends more than five miles, and many days when it does not reach that limit.

As regards temperature, there are few regions where the conditions more nearly coincide with the requirements given above. There is, indeed, a considerable difference between the heat of the day and the cool of the night, often amounting to 30°, but this is of daily occurrence and can be provided for. There is almost an entire absence of the rapid changes, cold waves, which are far from uncommon in our eastern states during the spring, fall and winter months.

The sun shines in the southwest more than in any other region of the country. Bright sunny days are the rule and cloudy days and days with continuous rain are rare. The southwest has received a bad name as regards wind, but my personal experience, covering nearly five years, has been that windy days are far less frequent than in the eastern states.

In Table I will be found a summary of the climatological data for the winter months for Phœnix, Ariz., and Boston. Table II shows the total number of hours of sunshine, and Table III, the number of days with precipitation for certain points on the Atlantic seaboard and in the southwest.

From these tables we learn that Phœnix is very much drier than Boston, that the winter days are warmer and the nights not so cold. As regards sunshine, the patient at Phœnix will have on an average three hours more per day than if he were in Boston. If there is anything in the outdoor life, it seems to me we must acknowledge the value of the climate of the southwest in the treatment of tuberculosis.

TABLE I.

CLIMATOLOGICAL DATA FOR PHŒNIX, ARIZ., ELEVATION 1,087 FEET.

	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Mean maximum temperature,	86	75	66	65	68	73
Mean minimum temperature,	56	46	38	39	41	46
Maximum temperature,	100	90	80	81	85	94
Minimum temperature,	36	30	22	23	24	31
Mean temperature,	71	61	52	52	56	60
Mean relative humidity, A.M.,	51	57	57	64	62	53
Mean relative humidity, P.M.,	26	32	32	37	28	24
Average precipitation,	0.4	0.6	0.8	0.7	0.7	0.6

CLIMATOLOGICAL DATA FOR BOSTON, MASS., ELEVATION 16 FEET.

	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Mean maximum temperature,	60	49	40	35	36	43
Mean minimum temperature,	45	34	24	19	20	28
Maximum temperature,	90	75	66	70	64	76
Minimum temperature,	25	−2	−12	−13	−11	−1
Mean temperature,	53	42	32	27	28	35
Mean relative humidity, A.M.,	77	77	74	73	73	71
Mean relative humidity, P.M.	73	73	70	70	70	69
Average precipitation,	3.9	4.2	3.4	3.9	3.6	4.3

TABLE II.

AVERAGE HOURS OF SUNSHINE PER MONTH.

	Oct.	Nov.	Dec.	Jan.	Feb.	March.
Boston,	185	132	149	151	170	195
Albany,	186	120	93	124	168	186
New York,	180	150	151	159	173	202
Philadelphia,	208	156	158	149	162	189
Baltimore,	211	165	159	162	179	211
Santa Fé,	281	239	228	231	224	278
Phœnix,	304	263	255	228	245	296

Table III.

Number of Days with Precipitation (Rain or Snow).

	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Total.
Boston,	10	11	11	12	11	13	58
Albany,	10	12	12	13	12	13	72
New York,	10	10	11	12	11	13	67
Philadelphia,	9	10	10	12	12	13	66
Baltimore,	9	10	11	12	11	13	66
El Paso,	4	3	3	3	3	2	15
Santa Fé,	5	4	5	6	7	6	33
Yuma,	1	1	2	2	2	1	9
Phœnix,	2	2	2	4	3	3	16

That there are many invalids who do badly in the southwest is not to be denied, but if these cases are investigated I am of the opinion that the cause will be found to be other than climatic.

The great objection to sending patients to that region is that the cost of living is more than those in moderate circumstances can afford. Accommodations at reasonable rates are hard to obtain, but in this respect there has been considerable improvement during the past few years. Excepting where there is extensive irrigation most of the food is imported from California and the railroads take from the people of Arizona "all the traffic will bear." At Phœnix there is an abundance of local fruit and vegetables and the alfalfa beef from the Salt River Valley is better than can be had in any eastern market that has come to my notice. I have not found the prices in Boston any cheaper than those in Arizona.

The social organization in the western towns is different from what we are accustomed to in the East. There people stand more on what they are, and less upon what their ancestors did. Amusements are of a different nature, there being few theaters and similar institutions, and the community depends upon itself for its diversion. Hunting, riding and prospecting occupy a considerable portion of the time of the people. Those who are interested in geology will find the territory of Arizona a most interesting study. The mountains and plains are covered with plants of beauty, and many of them are practically unknown to the professional botanist.

The Indians of the region are a most interesting study, especially the Hopi tribe which lives far to the north in the midst of the Painted Desert.

Many of the eastern physicians have an idea that there is plenty of work in the southwest and that an invalid can always support himself. This is far from true. There is an abundance of labor such as a healthy man can do, but the consumptive who is sent to that region in search of work is doomed to disappointment. Arizona, although rich in natural resources and a great producer of wealth, is poor as a commonwealth. Most of the money produced there goes to support those who live in fine houses in New York and other cities. The territory has no extra cash to expend for sanitoria for the benefit of eastern consumptives, but will, to the best of its ability, care for those who become indigent, which means a residence in the county poor house.

There is a movement on foot to establish a sanatorium in Arizona for the accommodation of persons in moderate circumstances, but until such an institution is assured I advise that only persons with sufficient means to provide for their care for at least one year be sent to the southwest. If you have a patient in the early stages who has sufficient money to obtain first-class accommodations, either at a hotel or one of the sanatoria, I strongly advise that he or she be sent to the southwest, as the recovery will be more rapid.

The following is a partial list of the sanitoria in Arizona and New Mexico. Arizona: Phœnix: Palm Lodge, capacity 25, rates $4 per day. St. Joseph's Hospital, capacity 35, rates $16 to $20 per week. St. Luke's Home, capacity 15, rates $12 per week. Prescott: Pamsetgaaf, capacity 15, rates $20 per week. Tucson: St. Mary's Hospital, capacity 30, rates $15 per week (arrangements are made to receive a few free patients). New Mexico: Alamogordo: Fraternal City Sanatorium, capacity 100, rates $7.50 to $15 per week. Albuquerque: Southwestern Presbyterian Sanatorium, capacity 15, rates $40 per month. St. Joseph's Sanatorium, capacity 40, rates, fifteen free beds, others pay from $15 to $25 per week. East Las Vegas: St. Anthony's Sanatorium, capacity 35, rates $9 to $15 per week. Lincoln: Ranch Sanatorium for Tuberculosis, capacity 20, rates $50 per month. Santa Fe: St. Vincent Sanatorium and Hospital, capacity 25, rates, $10 to $25 per week. Sunmount Sanatorium, capacity 25, rates $12.50 per week. Silver City: St. Joseph's Sanatorium, capacity 35, rates $100 per month. New Mexico Cottage Sanatorium, capacity 65, rates $83 per month.

In the above list there are about five hundred beds. None of the institutions have a rate as low as the Adirondack Cottage Sanitarium and many persons with the disease cannot afford to pay that little. Arizona and New Mexico are giving so much wealth to the East, cannot some of the many who have been benefited by her bounty return some of it to build and support an institution for those consumptives who have been stranded there while in their search for health?

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THE NEW SILVER SALTS AS COMPARED WITH SILVER NITRATE IN THE TREATMENT OF OPHTHALMIA OF NEWBORN CHILDREN.

BY HASKET DERBY, M.D., BOSTON.

Even the sombre field of medicine is liable to the invasions of fashions, and the grave physician has in all ages found it difficult to maintain a judicial frame of mind in considering the claims of the various remedial agencies and processes which like meteors flash along the horizon before they are lost in obscurity. A new drug is discovered and found, in some cases, to favorably affect a hitherto intractable disease. Its efficacy is widely published, it is experimented with, its field of operation widens daily, old and approved methods of treatment are set aside in its favor. But later on disappointments occur, the cures it is said to have effected fail to stand the test of time, some new agent appears as a rival in public favor and the fashion shifts. Instead of continuing to use it in the limited class of cases where it has been found unquestionably beneficial, the drug may be dropped altogether.

It is a discredit to our science that its followers should so entirely discard the use of remedies and procedures which have done some good work in their day and generation, and which possess a certain value when employed with discretion. Venesection, for instance, proved beneficial in a limited class of cases, and yet as long ago as in my student days its method was never described or its use taught. The humble and harmless, if annoying, blister is now rarely prescribed. Forty years ago there were people who made it their calling to apply leeches, whereas now it is not always easy to find a druggist who keeps them, and still harder to discover any one expert in their use. Who does not remember the wave of enthusiasm that greeted the advent of chloral hydrate, a drug now seldom prescribed. And in operative surgery itself, to cite but a single instance, how much was claimed but a few years back for the effect of operations on the ocular muscles. Headaches, vertigo, epilepsy, chorea, neuralgia, rheumatism and even costiveness were to be dispelled by this means. Chapter and verse can be given in support of the above. To-day such claims would rightly be disputed.

And now one of the writer's most cherished beliefs is marked for attack. The sovereign efficacy of silver nitrate in the ophthalmia of newborn children has always been with him an article of faith. He used it exclusively during his service of more than thirty years at the Massachusetts Charitable Eye and Ear Infirmary and believed in it then, as he does to-day. In the exceedingly valuable and instructive paper,[1] read by Dr. Cheney at the last meeting of The Massachusetts Medical Society, the following statement is met:

"At the Eye and-Ear Infirmary we have practically given up the use of silver nitrate [he is speaking of the treatment of this form of ophthalmia], replacing it by the newer salts, protargol and argyrol.

He moreover urges that the "facilities for treating this class of cases at the Infirmary are not excelled, if they are equalled, by any institution in the world."[2]

And this it would be difficult to dispute. A competent corps of day and night nurses is maintained, and in addition to the local remedial applications, the lids are cleansed every fifteen or twenty minutes day and night as long as the discharge persists.

Fortunate, indeed, the patients who gain admission to the Infirmary. But the disease is a not uncommon one in this and in all communities. It is so widely spread that fully one tenth of the blindness existing in any country proceeds from this cause. What, then, is to become of the children who cannot enjoy such faithful and excellent care. A natural inference from Dr. Cheney's paper is that here, too, we are to rely on protargol and argyrol, silver nitrate being ignored.

The writer claims that silver nitrate diminishes the discharge more rapidly and brings about a speedier cure than either of the new salts. This claim is made for cases treated under ordinary circumstances, as outpatients or at their homes. It is impossible that every one should have the opportunity of receiving hospital treatment or attention from a trained nurse. With them there cannot be kept up that continual cleansing of the eyes, which the writer believes to be the main factor in the success of the Infirmary treatment.

During his period of service at the Infirmary there was as yet no Gardner Building. The cases of ophthalmia neonatorum rarely entered the house on account of the danger of infection, the scarcity of beds and the frequent impossibility of keeping mother and babe together. The patients remained at home and made a daily visit. The eyes were first thoroughly cleansed, the lids then everted and their inner surface painted with a 2% solution of silver nitrate. This was applied by means of a camel's hair brush, which was packed in a wrapper and retained by the person bringing the child. If the discharge was profuse and thick and the conjunctiva of the lids swollen and spongy, bleeding spontaneously, it was customary to lightly scarify the surface and encourage the flow of blood, of which sometimes as much as a teaspoonful would escape. In place of the silver solution the *lapis mitigatus* (a crayon composed one third of silver nitrate and two thirds saltpeter) would then be thoroughly applied. In particularly aggravated cases the patient would be brought again at the close of the day and the treatment renewed. Of course the strictest attention to cleanliness would be urged on the mother.

A notable improvement would generally occur at once. The discharge would rapidly lessen, lose its thickness and finally cease. The corneal affection, if it existed, would be arrested. General recovery would be rapid and certain. The writer can truthfully assert that he never saw a case do badly if it were taken charge of before irreparable corneal injury had been inflicted.

A word now in regard to the efficacy of the new silver salts, as well as the estimation in which they are held:

Experiments relating to the bactericidal properties of these agents were made in the laboratory of the Eye Infirmary as well as elsewhere. The conclusions relating to argyrol were as follows: "Its bactericidal power is exceedingly weak. In a large series of observations a growth of the aureus was obtained after exposure to the 10%, 25% and 50% solutions for one hour, one hour and two hours. . . . Its action was uncertain, and while occasionally the germs were affected by a twenty-minute exposure, more often the cultures taken at the end of one hour showed a growth when examined twenty-four hours later." (Dr. Geo. S. Derby: "An Experimental Study on the Bactericidal Power of Various Silver Preparations." BOSTON MEDICAL AND SURGICAL JOURNAL, vol. clv, no. 13, p. 342.)

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[1] "The Immediate Treatment demanded in Certain of the More Serious Ocular Conditions that are frequently first seen by the General Practitioner." Page 12.

[2] *Ibid*, Page 9.

The same examiner found the bactericidal action of protargol "efficient, though not so efficient as that of nitrate of silver." But Professor Saemisch, of Bonn, should be cited in this connection.

"The anticipations that had been formed in regard to the efficacy of the new silver salts, more particularly of protargol in the treatment of the blennorrhea of newborn children, do not seem to be realized. It is true that Wicherkiewicz saw good effects from them, but in some cases he was obliged to have recourse to silver nitrate as well. Darier spoke well of this agent, which he used in the strength of from 20% to 50%; Fürst, too, got good results, but Pflüger was unable to confirm them; Dissler found protargol nearly as efficacious as silver nitrate in blennorrhea of newborn children, but he had to make his solution ten times as strong.

"In the clinic at Bonn this agent was repeatedly used in blennorrhea of newborn children but proved entirely inefficacious, having in several instances absolutely no effect and obliging us to resort to the nitrate of silver solution. It acted favorably in but one case. It is evident that the preparations of this agent now on the market have no uniform strength and that it should always be prepared fresh. It becomes, therefore, inadvisable to experiment with this agent in a disease requiring active and sure treatment, which we are certain to obtain in the application of silver nitrate." (New Graefe-Saemisch Handbook of Ophthalmology, Fascicule 8, Part 1, page 261.)

The writer, therefore, reiterates his belief that the good results obtained at the Infirmary are due rather to the systematic and thorough cleansing of the eyes than to the remedies employed. His own faith in nitrate of silver remains unshaken, and in his opinion it is the only agent that should be used in cases treated outside a hospital, either at the office of the surgeon or the home of the patient.

CHRONIC INTESTINAL CATARRH.

BY LESTER C. MILLER, M.D., WORCESTER, MASS.

(Concluded from No. 24, p. 791.)

Treatment. — In the discussion of treatment, we must consider what it is we want to do and what influences we have to combat. We have first to maintain the nutrition of the body; second, to reduce the wasting processes; third, to restore so far as possible the intestines to their normal functioning ability. We have to combat the irritation of the diseased intestine, which does not allow of time for food digestion and assimilation; we have to get rid of partly digested poisonous substances and of toxic waste products.

Diet is our most powerful curative agent; it is the one of which we have the most control and which answers best our first requirement as well as helps the others. The trouble with our diets is that we do not always sufficiently understand the action of classes of food in diseased stomachs and intestines, however well we may be able to tell of the chemical changes during digestion in health. All dietaries are more or less empirical, but some have more physiology to recommend them than others.

Our diet, by force of the circumstances of digestion, must be adapted to the highest situated catarrhal process. If we have a diffuse process, then we must be content with improvement of the disease in the small intestine first, trusting that lower portions will at least not grow worse. The same diet is not suitable for all cases, nor yet for all of the same type of case. Like our mothers' recipes for cooking, they must be mixed with large measures of judgment.

All dietaries should be carefully written out, and all additions written, so that there cannot be any doubt or guess-work. Printed lists of food which tell the patient to eat what is not crossed out are not only a lazy, shiftless method of prescribing, but they often aggravate the patient, because he is more likely to want the foods that are crossed off.

The nutritive value of food depends not only on its chemical composition, but also the degree of its usefulness in the digestive tract. Besides its use for nourishment, foods have an important mechanical effect on the intestines, and it matters a great deal what kind and how much refuse material a given food leaves in the intestinal canal. For comparison we may quote from Rubner's tables.

We find that of animal foods the albumins from 93 to 95% are used up, while of vegetables the albumin contained in them is from 60 to 80% absorbed, but the carbohydrates from 82 to 99% absorbed. The cellulose-containing vegetables are only 70% absorbed. From these tables it is quite evident that there is least waste to the pure nitrogenous foods.

The chief qualifications for a food are its easy solubility, not to hinder nor yet accelerate the peristaltic movements, not to irritate too much the mucous membranes of the digestive tract, either chemically or thermally or mechanically.

Catarrh of the small intestine. — The best general rule for a dietary for catarrh of the small intestine is to give one rich in albumen. The list of foods we may draw from are meats, fish, eggs; then as little sugar as possible; then white bread well cooked and stale, or zwieback, rice, sago, macaroni, cooked in water not in milk; then bouillon or barley soup; butter not salted, if it can be found; weak tea, red wine. This may be called a mild, rich in albumen, diet. It takes account of the ability of the small intestine to digest albumens in small amounts under most circumstances. It also considers the starches and the sugar-making ability of the pancreatic secretions. Variations, restrictions, differences in amount must be made to suit the individual case. For example, the severer cases may not be able to take more than simple egg albumen or the simplest form of lean meat, scraped toasted beef. In some cases the development of gas is so disagreeable that carbohydrates must be wholly ruled out. In practically all cases it is usually possible to find some form of albumen that can be borne.

Frequently in diffuse processes the large intestine objects to very much flesh and fish diet. This appears with distention of the colon, putrefaction of the meat and foul gas and foul stools. A reduction of the intake of albumens is usually sufficient to relieve the colon.

I cannot speak of the methods of preparation of food. It goes without saying they must be of the simplest. Highly seasoned foods must be avoided. Smoked meats or fish are almost indigestible. Caviar, cured fish and meats which are not cooked are to be avoided. The carbohydrates are usually well borne if given in small amounts at first. The more bread is cooked, not toasted, the more easily its carbohydrate becomes sugar; this is the chief advantage of zwieback over ordinary bread. The thing to keep in mind is not to provide more sugar-making food than can be managed easily.

Avoid cellulose-containing vegetables. Cellulose is not only insoluble, but it acts as a mechanical irritant. Carbohydrates in the form of well-cooked rolls, of rice and sago and flour in thickened soups, in barley soups, play an important rôle in the early diet.

Fat must be taken in limited amounts or we have a steatorrhea. Fat does not cause any putrefaction in the intestine, but in large amounts it acts as an excitant to peristalsis. In sub-acid conditions of the stomach fat in any amount disturbs the digestion of albumens in the stomach and small intestine. Yet unsalted butter is one of the most useful of fats. It melts at the body temperature, it is already to emulsify again and it is not irritating. If mixed with other foods it may be taken in large amounts, when other fats might not be borne. The fats which are bound up in meats, such as lamb and fat beef, which do not melt at the body temperature, should be avoided so far as possible until digestion is well established. During convalescence fat meats, even tender fresh boiled ham, may be assimilated.

Milk is not well borne by the small intestine, just why not is not well known, —it may be the amount of milk sugar. On the other hand, milk is well borne by the large intestine and may be used in practically all colitises. In chronic dysenteric conditions the casein in combination with milk sugar has proved itself more likely to withstand the action of putrefactive germs than muscle fiber and egg albumen. Milk cures in such cases seem to have the effect of disinfecting the intestine by taking away the bacteria in their mass. In the small intestine it often happens that milk cannot be borne for months, not even the amount of milk which may be added to foods in their preparation. Some of the milk preparations as koumiss and buttermilk are occasionally useful.

In certain diffuse intestinal catarrhs, when the stomach and large intestine are most prominently affected, the use of milk is most beneficial and will serve better than all other foods. These cases are rare. The inflamed small intestine is opposed to all insoluble substances, and this shows us the objection to many vegetables, for even when they are finely divided their cellulose is still insoluble.

Experience has shown that in stomach troubles the errors in diet will make themselves manifest in twenty-four hours, but in intestinal disturbances the appearance of diet mistakes may not show for forty-eight hours or longer.

With this in mind it is usually best to begin on diet according to rule as simply as possible; stick to the one thing long enough to be sure that it is right; then add one thing at a time, waiting long enough after each addition to be sure of its effect, and then gradually build up a dietary which has sufficient nutritive value for our case.

The *fluid* needs of our patients must be met with as simple drinks as possible. Carbonated waters, some of the natural spring waters containing lime, are often useful; preserved fruit juices for flavoring in water help out. In all we may need to provide from one to two quarts of fluid a day. Red wine with food is an easy way to add fluids. A good Bordeaux is best. White or sweet wines must be avoided, as also beer. Strong tea excites and irritates the intestine; weak teas are well borne; cocoa in water is some better if the stomach is in good condition.

So far I have spoken only of diet and that chiefly in its relation to small intestinal catarrhs. If we are to accomplish anything more than a temporary relief of symptoms it is necessary to build up our patients, to bring about a constructive metabolism or anabolism, which exceeds the destructive or katabolism. The only means at our disposal is absolute rest in bed for a long enough time to make sure of increase in weight and increase in the blood production. While the patient is in bed changes in temperature are more easily avoided; the use of hot or warm poultices and warm abdominal applications is facilitated. Exposure to cold wet weather is exceptionally harmful and every means should be used to avoid it.

The diet in *diffuse catarrh* must of necessity follow very closely that of the small intestine. The frequent diarrhea may make a reduction in the amount of fluids taken advisable for a few days. Rest and warmth are indispensable and must be long continued.

The diet in *colitises* usually has to solve the problem of constipation. In order to do this the feces must be smooth, free from hard, irritating substances, soft, not too good a medium for bacterial growth, so that it may pass along easily without irritating the mucous membranes. Refuse poor, water and fat rich would be the characteristics of such feces.

Drinking abundant water does not make a water-rich stool; the water may all pass away through the kidneys before it reaches the colon. Instead of liquids it is necessary to take foods with a high water content, which are insoluble in the stomach and small intestines and not soluble until they enter the colon. These are the vegetables and fruits, such fruits as are not too hard or too full of fibrous masses; well-cooked fruits without the skins; vegetables that are not too fibrous. The fat content of the feces we can increase by the use of large amounts of butter, cream, lard and pork fat and olive oil, when these are well borne by the small intestine. Meat, fish and eggs must be given sparingly to avoid putrefaction in the colon. Under some circumstances it may be wise to forbid meat and fish entirely. Milk in large amounts often makes a hard stool. Nevertheless, in some cases, as previously mentioned, it may be the best diet in persistent irritative colitis. In moderate amounts it is nearly always useful in colitises. Rolls and flour foods ought to be prescribed in small amounts. Sweets and rich foods of pastry kind should be forbidden. The coarse grain breads are not useful.

In colitises, we may be more liberal in regard to drinks; coffee with milk, white wine, lemonade, the stronger carbonated mineral water (Apollinaris and seltzer) and with constipation some beer are allowed.

At the risk of trying your patience, I want to outline the chief medical treatments, including irrigations.

The colitises, especially of the transverse and descending parts, are most easily reached by irrigations, and in my experience, when these are carefully used, they are the most satisfactory adjuncts to diet. We must recognize the difference between injections for cleansing the bowel of feces and irrigations for a strict local or tonic effect. With injections we fill the bowel as full as it will hold, but an irrigation should only very slightly distend the bowel, and then not for long, but the irrigation may be long continued, if the tension is frequently relieved by letting a part of the water flow out and then renewing it. With this method a patient placed on his left side, the hips raised, the solution started, then the patient turned on his back, then on his right side, the solution can be made to reach even to the cecum. Kemp, of New York, proved this with solutions of methylene blue. Kemp has made more detailed reports of the uses of the double current rectal tube than any one else.[1]

Salt solution, Carlsbad salt solution, silver nitrate solution, tannic acid solution are all good and useful in proper cases. These solutions, especially the tannin or salt, may be frequently repeated for the removal of mucus and for astringent effects. They are well borne at the body temperature, or in some cases cold. Personally, I do not think clear cold or warm water proper for high irrigation. It may cause spasm of the bowel, and often causes an increased secretion of the mucus. The long-continued use of salt solution is often inadvisable. It is better to limit its use to two or three irrigations a week after the first week or two.

Drug treatment. — The chief use of drugs is to help check the spread of the inflammation and to help reduce the excretion of mucus in; a less degree to help clear out the bowels, when that is necessary, and as so-called intestinal disinfectants.

I have taken too much time for this subject, so I can only state the few drugs I have found useful.

As astringents, the tannin preparations are probably the best, especially tannigen, bismuth, bismuth subnitrate and subgallate, bismutose and bismuth betanaphtol.

For the antiferments and antiseptics, thymol and those like it check fermentation. Bismuth salicylate, bismuth betanaphtol and menthol also check it. Resorcin, chloral hydrate, silver nitrate, but especially benzonaphtol, stop fermentation. The latter has the advantage that it passes through the stomach unchanged and does not irritate the intestine where it is split up into fresh naphtol. Ewald has tested this drug and recommends it either alone or combined with bismuth salicylate and resorcin in doses of 30 to 75 gr. a day. I have used ichthyol in capsules every four hours, 1½ gr., with success. In most cases more frequent doses irritate the stomach or they cause eructations of the drug. I have heard of ichthalbin, an albumen composed of ichthyol, which is insoluble in the stomach, but I have not seen it yet. It is said to be useful with children.

Bismuth subgallate is one of the old standbys which is excellent for diarrheas. The lime compounds are practically all useful.

The best method of administration, as a rule, is to begin with as large a dose as the case will stand and decrease it gradually as improvement appears.

The use of mineral waters in a few cases gives excellent results. The Carlsbad water, of which sodium sulphate, soda bicarbonate, sodium chloride and potassium sulphate are the ingredients, given very hot in small doses, helps clean up the intestinal mucus membranes and has a stimulating effect on the stomach secretions. Rubinat Condal water, of which sodium sulphate is nearly the whole mineral present, with a very little magnesium sulphate, is useful in cases which show some liver involvement and can stand one or two loose movements a day for a short time. Given hot in small amounts before breakfast it acts quickly and does no harm.

It goes without saying that other conditions, as the stomach, heart, blood vessels and kidneys, have been considered before mineral waters are used. Mineral waters are a study in themselves, which we have not learned to use satisfactorily in this country. Their best use is in stomach and certain liver and gouty diseases.

If I have seemed to pass too hurriedly over the medicinal part of the treatment it is because I consider the diet so much more important that I preferred to give as much time as possible to that. That drugs play an important part in the treatment of the worst forms of intestinal catarrhs I would be the last to deny, but I am persuaded that we are too likely to depend too much on drugs and not give as much attention to the dietetic treatment as it deserves.

In conclusion, let me say that if I seem to have dwelt too much on trifling details, and drawn out my paper to small purpose, it is because I believe that only by painstaking attention to the details of diagnosis and treatment can these cases be successfully handled.

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[1] N. Y. Med. Jour., March 13, 1897.

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Clinical Department.

POSTERIOR ILIUM BACKACHES AND THEIR MECHANICAL TREATMENT.*

BY MARY E. BATES, M.D., DENVER.

DURING the past four years I have been especially interested in the cause and effect relations between anatomic lesions of joints and various functional and organic diseases, and in manual treatment for their relief and cure. In May, 1906, I reported a case of "Right Posterior Ilium" to the Denver Clinical Society.[1] When this patient was first seen, a sixty-six-year-old 180-pound woman, she had been treated for six weeks, unsuccessfully for backache and "sciatic rheumatism." She had "stepped down hard" a few days before seeking relief for "rheumatism," and her right ilium had slipped and locked on the sacrum. About a dozen manual treatments restored normal mobility and poise to the right sacro-iliac joint, stretched the great sciatic nerve and relieved all aches and pains and she has had no trouble since (May 10, 1908).

The conventional conception that the sacro-iliac synchondroses are not true joints, but practically immovable junctions except when the softening of pregnancy permits separation during the passage of the head, was well brought out in the discussion, as was the fact that their mobility and their liability, like other movable joints, to anatomic ("non-pathologic") lesions have been unrecognized by the medical practitioner. In the most elaborate theses on the "Pelvic Articulations" of which I have knowledge, Goldthwait and Osgood, in the BOSTON MEDICAL AND SURGICAL JOURNAL, March 9, 1905; May 18 and 25, 1905; and *Journal of the American Medical Association*, Aug. 31, 1907, write:

"When this is once appreciated [that the sacro-iliac articulations are true joints], and the character of the articulation is considered, and especially when it is remembered that the exact apposition of these bones is maintained almost entirely by the ligaments, the surprising thing is, not that abnormal mobility and disease ever do occur, but that they do not occur more frequently. There is always without question a physiological relaxation of these articulations during pregnancy, and possibly always during menstruation, but these are only some of the factors which cause an excess of the normal amount of motion. Injury, disease, a general lack of ligamentous tone, are all factors. With these conditions sex is of no importance, except that as the female pelvis is less firmly constructed, the mobility is more easily obtained. On the other hand, because of the greater strength and size of the articulations in the man, when abnormal motion does take place, the disability is likely to be more marked than with the woman. As the cases are studied they at once divide themselves into groups: the first, including the cases in which there is definite relaxation associated with pregnancy, representing an exaggeration of a normal physiological condition; the second, the cases in which relaxation is associated with menstruation, apparently representing also a physiological condition apart from any pathological change with which we are at present familiar; and the third, the cases in which the lesion is due to trauma, general weakness or some definitely known pathological process. In general the relaxation associated with pregnancy is more marked [than during menstruation] as it is also more rapid in its development, but it is also more certainly and quickly rectified by treatment when the cause is removed. [Meaning pregnancy as the cause.]" They advocate reduction manipulations, rest in bed, — though lying in bed is given among the causes,— retention bandages, plaster of Paris dressings and even fixation by a special apparatus designed to keep up pressure on the sacrum.

They quote Snelling as follows: The affection appears to Snelling to "consist of a relaxation of the pelvic articulations becoming apparent suddenly after parturition, or gradually during pregnancy, permitting a degree of mobility of the pelvic bones which effectually hinders locomotion, and gives rise to most distressing sensations."

These writers do not state what constitutes their standard of normal mobility, but their "normal and abnormal" appeal to me quite differently. To them "relaxation" and "excessive mobility" are cause and effect, are abnormal and give rise to aches, pains and distressing sensations. I would use the term "relaxation" to mean that the motor elements of a non-pathologic joint are enfeebled, untrained and uncontrolling, and "abnormal mobility" to mean a lesser amount than is required for the perfect and painless performance of any reasonable activity of the joint. Aches, pains and distressing sensations, in my experience, are found in joints whose mobility is diminished or hindered, not in joints that are "excessively mobile." Every joint has a certain normal range of motion, the usual and the possible; a normal poise relation when at rest; they should be able to go the course and return to poise *ad libitum* without distress and without getting stuck somewhere on the way. If they cannot do that it is because they are limited in mobility either by disease or disuse or by something that for the time interrupts mobility, and such joints are stiff, painful, aching and disabled.

A few years ago I treated a woman who had sat and sewed so much that all of her joints were stiff and painful and more or less disabled. She imagined that joints that hurt to move should not be moved, and so she grew stiller and stiffer until she could not separate her knees more than one inch. She had practically but one leg and could not stand or walk without support. After eighteen treatments she could move her knees fourteen inches apart and did not need a cane.

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*Read before the Denver County Medical Society, May 19, 1908.

[1] November, 1906, Woman's Med. Jour., and Denver Med. Times.

The forcible though gradual stretching and the exercising of such joints constitute a painful process, but the safest and only logical treatment for these non-pathological limitations of joint action. By this process the nerves too are stretched, and it is wholly unnecessary to cut down upon any nerve for that purpose, as was once the surgical custom for sciatica, and as has even recently been advised for a sciatic pain said to be due to some interference with the nerve at the sacro-iliac junction. The apposition of sacrum and ilium seem to me to depend upon the integrity and training of the motor elements of the joint rather than upon the ligaments. The ligaments determine how far the relations of the articular surfaces may be changed to effect the movements required of the joint. And all of this depends upon the type of original construction and the articular habits of the individual. Some are naturally " closely knit " and some are " loose-jointed." Nature has a fashion of taking in unused slack. She will shorten slack in every unused joint, and the resulting stiffness and limited mobility is not more normal or desirable in the sacro-iliac than in other joints. The sacro-iliac are complementary to the hip-joints, for the purpose of increasing the extent of motion of the hips in every direction, and not merely to form a junction of the body with the supporting pedestals, the lower extremities. It is the usual small amount of motion in both the hip and the sacro-iliac articulations, in comparison to the possible, that strikes me as subnormal and undesirable, and even dangerous. The usual awkwardness of men and women, well seen as they get off and on the cars, is due to untrained, unintelligent subnormal mobility of hip and sacro-iliac joints. The wonderfully graceful and mobile lower extremities of professional dancers are so by virtue of ligaments that permit extensive changes of relation between the articular surfaces of sacrum and ilium; of trained nerves, and powerful muscles that intelligently control the wildest, most excessive mobility and ever faithfully return the parts to the normal conditions of rest. There are no aches and pains and distressing sensations connected with these extremes of " excessive mobility." They are normal physiological possibilities, and nothing that is normal and physiological should ever be other than beautiful, harmonious and painless.

Adduction, abduction, rotation etc., of the lower extremity on the trunk, and vice versa, demand other than the flexion and extension changes around the axis that passes through the articular surfaces of the sacrum and ilia on a level with the middle of the second sacral vertebra. But because abduction, adduction and rotations are less practiced than flexion and extension, their controlling muscles are less evenly trained, are less well prepared to resist unusual sudden or slow strains and are less able to swing the joint with power and certainty into poise when subjected to such conditions. It therefore happens not infrequently and in different ways that these poorly qualified joints get locked at some point. It may be from sheer incapacity to return to poise after a perfectly simple motion, such as stooping, when followed by a " stitch in the back " ; or as the result of a long-continued strain, such as the pulling forward of the lumbar spine — lordosis — in nature's effort to relieve the weight on the sympathetic of a heavy abdomen, whether male or female, pregnant or non-pregnant, when unsupported by lax abdominal walls; or by the jarring out of alignment of sacrum and ilium by some direct force from without. All of these processes limit mobility and are painful in exact proportion to the loss of mobility entailed. When these conditions are coincident with pregnancy or menstruation, they, and not the pregnancy or menstruation, are responsible. Millions of women have suffered tortures upon tortures during pregnancy and menstruation because of the old conventional notion that all sorts of aches, pains and disabilities are to be expected and to be endured until pregnancy and menstruation cease, and even during " change of life, " for these are " normal physiological conditions." The possibilities for maternal dystocia that lie within the incompetent muscles of uneducated sacro-iliac articulations should suggest possibilities of controlling much of the pain of labor by the deliberate preparturient training of the joints involved in the second stage of labor.

There is no good reason why the sacro-iliac joints could not be made far more mobile and pliable so that they could endure far greater separation with impunity and even through the intelligent co-operation of the patient be taught to voluntarily increase the diameter at the inlet when the head engages at the brim, and of the outlet when the head is at the perineum. In all of the cases that I have treated I have sought to restore and increase mobility in the sacro-iliac articulations as in all others, and to all of their motor apparatus, so that they can perform their physiological functions with grace, ease and pleasure. There being no dislocation through a torn ligament, I do not employ rest, or casts, or other fixation methods to secure a closer apposition of sacrum and ilium and to artificially stiffen their union.

There are various reduction maneuvers that will suggest themselves, and on the same principles, as are applicable to a dislocation. Usually I prefer to execute them with the trunk as the fixed part, and using the lower extremity to flex, extend, rotate, adduct, etc., as necessary to " exaggerate the lesion " first and then to slip the ilium and to push it to place in relaxation instants. One very effective way is, with the patient on her back in full extension, to literally shake the sacrum through the iliac arch, the operator grasping the ilia, lifting the whole pelvis and shaking it.

In double posterior ilium, while the patient, prone upon a table alternately raises and lowers herself, one operator, by striving, with one forearm beneath her, to approximate the ilia anteriorly while making strong interrupted pressure down against the lower part of her sacrum with the other forearm or a knee, can often spring the ilia and sacrum into normal relations, or by a series of treatments into increasingly normal relations. With such a patient sitting, one operator can fix the pelvis, spring the sacro-iliac joint and make the forward impulse against the sacrum, while a second operator rotates the trunk and extends it in the perpendicular.

ILLUSTRATIVE CASES.

Case I. Mrs. H., age, thirty-six, lithemic. March, 1907, no organic lesion save almond-sized uterine fibroid. While in Collins in middle of May, 1907, was awakened in night by intense pain in right ovary. (Descriptions hers.) "Applied heat, etc., to thigh and back. Pain continued for thirty-six hours. Then it spread to lumbar and right sciatic. Hard to stand or change position. Couldn't put feet on bed. Intense pain in knees and front of shins. But the queerest sensation was in a band seemingly about five inches above the ankles. This band was cold to the touch and from within seemed like a band of frosty steel clasped on very tight and having prongs inside. This sensation continued for three or four weeks except while being rubbed or having heat applied. All other pains were varying or shifting, this one constant." After several weeks at the Clark's Mineral Springs, at Pueblo, she came to Denver. Had passed through a mental and physical collapse; was but little improved, with her "rheumatism" about the same. June 10: Pelvis everywhere exceedingly tender. Right ovary rested against right sacral plexus. All of the sacro-sciatic ligaments tense and acutely painful to pressure. Appendicitis excluded. The greatest pain and sensitiveness was external, over the posterior sacro-iliac ligaments, which were very tense and painful because the ilia were displaced backwards, making the step-off to the sacrum so pronounced that the sacrum seemed in a recess and quite "anterior." The left innominate yielded quite readily; reduction of the right was more difficult. She had twelve treatments between June 10 and July 2 inclusive. The left side symptoms subsided when the left ilium was in place and the right side symptoms faded in exact proportion to the success of the maneuvers that restored the right ilium to poise. She toured Colorado in a buggy, camped out and did her share of the work and had no further trouble.

In this case the predisposing cause was an enfeebled general condition with untrained joints, and the exciting cause was the direct force applied to the tuber ischii by bumping in the saddle during two hard horseback rides on the two days immediately preceding the acute night attack.

Case II. Miss T., trained nurse, after three days and four nights of continuous duty on a heavy case requiring much lifting, went home exhausted, aching from head to foot and with a "cold." After three days of rest mostly in bed, her back and legs still "ached like the toothache." Pelvic organs normal. Left half of floor of pelvis exceedingly painful to pressure. Left sacrosciatic ligaments tense and prominent, formed a sort of barrier across pelvis precisely as in the case reported to this society, and published in the *American Journal of Obstetrics and Gynecology*, vol. lv, No. 2, under the title, "Maternal Dystocia from Right Posterior Ilium producing Persistent R. O. P. Position."[2] Left innominate found displaced backwards on sacrum, left posterior sacro-iliac ligaments tense and painful, left gluteal region flattened. Two treatments on succeeding days brought much relief in position and condition, enabling her to come to the office where one physician diagnosed the difference without assistance and another failed to do so. Two more treatments on succeeding days completely restored the ilium to poise, to normal symmetry and painless mobility. The pelvic walls, internally, ceased to be sensitive or tensed, and all aches, pains and disability vanished.

Case III. Mrs. C., thirty-seven. Consulted for a peculiar pain coming regularly during the week preceding menstruation. Lasts three days, intermits, and is absent the day before and during the flow. Pain is sharp, referred to right and left inguinal regions, worse on right. At the same time the abdomen grows hard, and there is a soreness above the symphysis. Alternating profuse and scanty urine and brick dust. General health and condition very good. Examination negative. Spine closely built and mobility in all joints limited, especially pelvic articulations. Treatment: physical culture, hygiene and mobility manual treatments to spinal column and lower extremities. First month's efforts rewarded by absence of pain from left side. Second month's treatment gave less pain on right side and of shorter duration. Also it was less diffused, the tenderness and discomfort localizing over the right posterior sacro-iliac articulation. Now stated that she had had backache in both hips all of the time, but that she did not mind that so much as the pains in front. Right ilium plainly posterior. No soreness or disability connected with the left sacro-iliac joint. Since I had tried to increase mobility in both of these joints, and had regularly made the manipulations that might restore a posterior ilium that was easily replacable, and since the left side pain had disappeared and the left sacro-iliac region was normal and just the opposite conditions prevailed on the right side, it seemed rational to assume that the left innominate had been accidentally returned to poise, thereby showing the right by contrast to be posterior and that returning the right ilium would remove the pain, etc., of the right side. She passed the third month without pain and with the right ilium in normal alignment, mobile without discomfort. Sept. 2 she reported little pain during July and August, nothing to what she used to have. Right innominate slightly "out." On my return from the East in December this patient, to my inquiry over the phone, informed me that the pain had returned; that she had consulted a specialist (a gynecologist) who had said he did not know just what caused the pain, but advised an operation, she did not know just what, and that they were considering it. I am confident that with a little common sense and a little more patience occasionally, she might have had a complete cure.

Case IV. Miss J., twenty-six. When seven or eight years old her brother pulled the chair from under her as she sat down. Was lifted into bed where she remained till most of the stiffness, backache, pain on rising, turning, etc., wore off. Since then has had constant but varying amounts of backache across the hips, and every few months an attack of what was called "lumbago." Has worn mustard or porous plasters, belladonna plasters, most of her life "to strengthen her back." First day of first menstruation fell into the river, was fished out and flow stopped, not to return for two months. Since then has had menorrhagia, metrorrhagia and dysmenorrhea, for which was curreted unsuccessfully twice, at nineteen and twenty years of age. Very severe cramps, nausea, often vomiting, hard headache, severe backache and a few faints have been common first day's experiences. Frequent headache, often sick headache, excessive nervousness, even hysteria, melancholic mental perversions and illusions precede and accompany menstruation. Last year three attacks of "lumbago." Examination: Round shouldered, narrow chested, irregular spine, right and left posterior illium; both of these joints stiff, motion limited and ligaments tense and painful to slight pressure. (An ilium that is posterior will abduct further and adduct less than its normal fellow.) She had, also, an anterior atlas, a right posterior third cervical, a posterior fourth cervical, all very sensitive, and marked scoliosis, but that is another story. Under treatment it soon became apparent that an acute displacement was superimposed upon an old subluxation of both ilia. Subjectively her aches and pains were always found on examination to correspond accurately with the degree of displacement and the limitation thereby produced. The right innominate learned to "stay in" long before the left one did, i. e., it learned to return to poise at rest, whereas the left one was apt to get locked most anywhere in its normal range of movement and be incapable of returning by its unaided effort to poise. March 12 and 13 had "lumbago"; was brought to my office bent over and in great distress. Could hardly climb up stairs, walk, sit or rise; could not stoop to floor or lie down on the table on account of stiffness, lameness, aching and pain in hips and back and legs. The whole trouble focused at the left sacro-iliac joint, and the left innominate was markedly posterior. It was readily replaced and she left the office completely relieved and danced all evening at a party. Last fall when the left ilium got stuck in a different place her symptoms were different. The distress and pain were referred to the abdomen, to the left inguinal region particularly Left innominate was found to have rotated forwards and locked; the left anterior superior iliac spine was far below the right and on a plane posterior; the left posterior inferior spine was too near the median line and the left crest fell away from the vertebræ leaving a wider recess angle than on the right. There was striking flattening of left buttock below the crest, more marked than when the displacement is horizontal rather than oblique. It was in this position when the accompanying skiagraph was made. Neither ilium has been locked "out" since December, 1907, for when one threatens to come out, as evidenced by the appearance of a little stiffness and pain, she goes through the maneuvers by voluntary movement and kicks it in again herself. The menorrhagia, metrorrhagia, disappearred early in the treatment. Often there is no dysmenorrhea; no headache except when careless about B. M. or her glasses get crooked. Physically she is infinitely better. Of course her rather complex errors of refraction were corrected, her neck vertebræ put in alignment and made safely mobile; she received appropriate mental, physical and hygienic treatment, and these measures deserve due and great credit, but the very extraordinary effect upon the patient, particularly upon her mental and menstrual conditions, of the direct and reflex irritations produced by these interruptions to sacro-iliac mobility, have constituted a fascinating and instructive study.

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[2] This patient was seen May 5, 1908. Her right ilium was as normal as her left. Had had no trouble with her back for a long time. Since confinement has worn a straight-front, front-laced corset or girdle which has effectually prevented a pendulous abdomen from producing a lordosis to, in turn, strain the sacro-iliac joints, and which in a person who habitually jumps from horse or carriage, as she did, right foot first, would naturally predispose to a "right posterior ilium."

Case V. Mrs. L., twenty-seven, four and one-half months pregnant, second child. Consulted for severe and continuous backache of several weeks' duration with increasing incapacity. Extreme lordosis, shuffles with distress when walking. Pain, aching and stiffness in pelvic joints. Cannot stoop to floor, nor lie down, get up or turn over on table without help because of pain and stiffness in both sacro-iliac joints. Marked right and left posterior ilium. Patient received, from March 5 to 18 inclusive, five treatments consisting of the usual manual maneuvers very gently given. She was, at and after the fifth treatment, quite limber and nimble and without aches, pains and incapacity. She was taught to hold her abdominal muscles tense so that the belly wall would afford support, with increasing strength, to the abdominal contents. To assist in this she was fitted to a front-laced combination abdominal and nursing corset, to be worn also after confinement. She was taught to stand and to sit correctly and the proper physical exercises to develop intelligent power in the muscles and mobility in the lumbar and pelvic articulations. When the abdominal muscles are well trained and meantime properly supported, the weight of the abdominal contents does not drag on the sympathetic and there can be no consequent following forward of the spine to relieve the pull on the sympathetic; hence, lordosis is prevented or relieved and the lordosis strain on the sacro-iliac articulations ceases and the sympathetic backaches and aching, stiff and painful sacro-iliac joints also disappear. A potent predisposing cause of posterior ilium is thus removed, and safe mobility of the pelvic joints becomes possible. In this case the exciting cause was direct force repeatedly applied to the tuber ischii. When I saw her she had just returned from an almost continuous railroad trip of two months, and the jar of the train had literally bumped the ilia "out."

These are typical cases of "non-pathologic joint lesions," using the term to indicate an absence of all "pathological processes with which we are at present familiar." Many would consider a joint pathological if it were abnormal in any respect, functionally or organically; it would seem, therefore, that the term "anatomic lesion" might be the better one. I have preferred "posterior ilium" to "anterior sacrum" for several reasons. The term "anterior sacrum" offers no description when, as often happens, but one ilium is out of place. "Anterior sacrum" implies ilia in normal relation to each other and a primary change at the lumbo-sacral joint which permits the sacrum to fall forward. This is the extreme lordosis position, where (from weight of pregnant uterus or ptosed abdominal organs) the lumbar vertebræ are increasingly anterior from above downwards. The fifth carries with it the upper part of the sacrum, compelling the lower part to compensate by marked posterior convexity.

Compensation also requires backward tilting of the ilia, which, if alike, may appear to be in normal position. Or the process may have happened in the reverse order, as in a case seen recently, where a double posterior ilium (most probably from excessive rope jumping when a child) demanded compensatory anterior sacrum lordosis.

Backaches from this type of displacement are of the dull aching kind, and while continuously vicious, are less acutely painful, less acutely disabling than those of "posterior ilium," and hence are more patiently endured and more liable to be overlooked. "Posterior ilium" is not necessarily preceded by a lordosis, and whether it is or is not, and whatever the secondary position of the sacrum may be, the actual active factor is the displaced ilium. Whether the ilium turns on the sacrum, or vice versa, mobility at the sacro-iliac articulation finds the sacrum with the trunk and the ilium operating with the lower extremity. The diagnosis "anterior sacrum" naturally compels an attempt to reduce the sacrum. Since the sacrum with the trunk constitute the heavier, less intermobile and oftener the fixed part, to replace an "anterior sacrum" and so fix it that it cannot slip on the lighter, more intermobile and oftener the movable part is a difficult feat and accounts for the strenuous dressings, the plaster bandaging and the complex fixation apparatus of Goldthwait and Osgood, as well as for their theory of achieving a limitation, with normal relations, of "excessive mobility" at the sacro-iliac articulation. On the other hand, the diagnosis "posterior ilium" as naturally, psychologically, invites attempts to replace the ilium, which for the same reasons is almost as easy as it is difficult to replace a sacrum. Considering the innominate as a part of the lower extremity so far as mobility on the sacrum is concerned, the true object to be accomplished, their true cure, is not fixation and lessened mobility, but a perfected and controlled mobility, for which rest in bed, bandaging with plaster and apparatus to limit action and establish more stable relations by stiffening the joint are contra-indicated.

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Reports of Societies.

THE AMERICAN DERMATOLOGICAL ASSOCIATION.

Thirty-second Annual Meeting held at Annapolis and Baltimore, Md., Sept. 24, 25 and 26, 1908.

The Vice-President, Dr. William Allen Pusey, of Chicago, in the chair.

First Day, Thursday, Sept. 24.

This meeting was held at the State Capitol, Annapolis, Md.

A STUDY OF SOME FORMS OF HORNY AND SEBACEOUS CYSTS.

Dr. Andrew R. Robinson, of New York, in this paper, gave the results of some studies made at intervals the last few years on conditions described by writers under the term "follicular cysts, horn cysts, sebaceous cysts, comedo and milium," and concerning which there was some difference of opinion, especially as regarded the origin, location and constitution of the lesions. Based upon the character of their contents, he divided all cysts of the pilo-sebaceous system into horny cysts, mixed cysts and sebaceous cysts. A pure horn cyst may exist, but not a pure sebum cyst. The latter never arose primarily in the secretory part of the glands nor in a special excretory cyst, but always in the common duct. A pure horn cyst might be situated in the follicle orifice or on one side, and thus, displacing the orifice, make it invisible to the naked eye. A horn cyst, the so-called milium, probably arose in the majority of cases from the external root sheath, but it might be the result of misplaced embryonic rudiments.

In connection with his paper Dr. Robinson described in detail the microscopical appearance of the less frequent forms of follicle cyst of comedo condition, and showed drawings illustrating the same.

Dr. Milton B. Hartzell, of Philadelphia, said that this entire subject had been much neglected, and the question arose whether some of these horny cysts were really not due to some faulty keratinization in the very beginning. As to the relationship to retained hairs to the formation of these cysts, that was undoubtedly a secondary condition. Hairs were retained because the ducts were malformed from previous disease.

Dr. John A. Fordyce, of New York, said in support of Dr. Hartzell's views that we had the lesions produced by exposure to paraffin and tar, with the entire sequence that we observed in acne vulgaris. Of course there were many etiological factors that entered into the formation of these cysts.

The discussion was continued by Drs. Thomas C. Gilcrist, of Baltimore; J. Nevins Hyde, of Chicago, and S. Pollitzer, of New York, and was closed by Dr. Robinson.

ON CERTAIN CLINICAL FEATURES OF CASES OF CONGENITAL ALOPECIA.

Dr. James Nevins Hyde, of Chicago, presented this paper. He said that under the several titles alopecia congenita, hypotrichiasis, universal congenital atrichia and congenital alopecia areata there had been described a group of rare cases in which the symptoms, presumably originating from different causes, had presented a suggestive similarity. The case reported by Dr. Hyde was that of a boy, fourteen years old, with a negative family history. The scalp was normal in color and texture and was completely covered with scanty, short stiff hair, pointed at the extremity, non-pigmented, and averaging not more than a centimeter in length. This condition, without appreciable change, had existed since birth. The teeth were normal in color and number, although unusually separated, small and notably peg-shaped. The frenum of the upper lip extended below the inferior border of the gum and was brought down between the separated central incisors. The congenital alopecia in this case was also accompanied by anomalous conditions pertaining to the hands and feet.

Dr. James MacFarline Winfield, of Brooklyn, said the case reported by Dr. Hyde reminded him of a similar one that had come under his observation about seven years ago. The patient was a man about thirty-five years old who had not a congenital alopecia, but a congenital thinning of the hair. His hair did not begin to grow until he was a child of five or six years. The speaker considered these cases to be examples of degeneration, and he was under the impression that they were due to ancestral syphilis.

Dr. Grover W. Wende, of Buffalo, said that some years ago he reported two instances of congenital alopecia associated with epidermolysis bullosa hereditaria, which might appropriately be classed in Dr. Hyde's group.

Dr. Augustus Ravogli, of Cincinnati, recalled one or two cases of hereditary syphilis associated not with completed baldness, but with a very scanty growth of hair, and in one case with imperfect development of the fingers.

The discussion was continued by Dr. Pusey. Dr. Hyde, in closing, said that in his case there was no evidence nor suspicion of hereditary syphilis and no consanguinity in marriage. The family history was remarkably good.

THE RESISTANT MACULO-PAPULAR SCALY ERYTHRODERMIAS, WITH A REPORT OF THREE CASES.

By Dr. William Thomas Corlett, of Cleveland. This paper, which also included a preliminary pathological report by Dr. Oscar T. Schultz, of Cleveland, gave a brief résumé of the cases reported under various names, such as parakeratosis variegata, erythrodermie pityriasique en plaques disseminées, parapsoriasis, paralichenoides, pityriasis lichenoides chronica, lichen variegatus, etc. The author reported in detail three cases of this general character and raised the question whether they constituted a disease *sui generis*, or should be regarded as aberrations or anomalies of various well-known scaly eruptions.

Dr. Ravogli reported a similar case which recently came under his observation and which he regarded as a case of pityriasis lichenoides chronica.

Dr. Hartzell said we should be careful not to include too much under this one title; otherwise, we were liable to include a great variety of totally distinct affections. While all these affections resembled psoriasis, the question arose whether they were all the same disease.

Dr. S. Pollitzer agreed with Dr. Hartzell that perhaps we were attempting to crowd cases that did not belong there into the same category.

The discussion was continued by **Drs. Schamberg** and **Hyde**, and was then closed by **Dr. Corlett**.

NAEVUS UNIUS LATERIS; WITH A REPORT OF A CASE.

By **Dr. Alfred Schalek**, of Omaha. The writer defined naevi as benign, usually congenital, tumors, sometimes of the same structure and appearance as the normal skin, at other times showing a predominance of some of its components, such as the epithelial and the connective tissue, the hair or the pigment. According to Unna, they were embryonic anomalies appearing and slowly developing after birth. Duhring believed that they were almost invariably acquired during later life. They were a common affection, some statistics even showing an occurrence of 100% in a certain number of people. Unilateral naevi occupied an exceptional position among the naevi, and were of rare occurrence. Their distribution followed certain defined lines of the skin and was in some cases limited to one half of the body. The linear naevus should not be confounded with linear ichthyosis hystrix on account of a somewhat linear appearance. This mistake was still found in some recent textbooks, where both affections were described under the same heading. The pathological changes were sufficiently distinct to exclude all relation between them.

Dr. George H. Fox, of New York, said he was not in entire accord with the name that Dr. Schalek had selected for this affection. While it was usually unilateral, it not infrequently occurred on both sides of the body.

Dr. Robinson said he wished to protest against the view that ichthyosis hystrix was based upon an inflammatory process.

Dr. Pusey said he wished to record his belief that there was no essential difference between ichthyosis hystrix and unilateral naevus.

Dr. Hyde said he was strongly in favor of excluding the term " ichthyosis hystrix " from our nomenclature. Some of these cases belonged to one category, some to another, but none actually belonged to ichthyosis as we understood that affection to-day.

Dr. Schalek, in closing, said the term " naevus unius lateris " was the one generally applied to this affection, and it was fairly accurate, even if a few small lesions were found beyond the border line. Personally, he regarded ichthyosis hystrix and naevus unius lateris as entirely distinct affections. In reply to Dr. Hyde, the speaker said he preferred the name systematized naevi to naevus unius lateris.

A CASE OF XANTHOMA DIABETICORUM AND LIPOMA MULTIPLEX AND A CASE OF XANTHOMA APPROACHING THE DIABETIC TYPE WITH DIABETES INSIPIDUS.

Drs. William Allen Pusey and **O. P. Johnstone**, of Chicago, presented this paper. Aside from the extreme rarety of the skin lesions which the two cases presented, they were interesting from the following facts: In the first case, xanthoma diabeticorum occurred in a patient with multiple lipomata. In the second case, xanthoma multiplex, resembling in some respects the diabetic type, was associated, not with saccharine diabetes, but with diabetes insipidus. In Case I the multiple lipomata were probably only a part of the general adipose tendency of the patient. They had been present at least since adolescence, and presumably very much longer than the diabetes. They were in all probability entirely independent of the xanthoma, except insofar as the diabetes was an expression of the adipose state. In view of the fact, however, that some investigators had seen a relationship between xanthoma and lipoma, the combination was at least an interesting coincidence.

Dr. J. Nevins Hyde said that while both the cases reported by Drs. Pusey and Johnstone were of extreme interest, the question arose whether, in spite of the similarity of the skin lesions, both clinically and histologically, they should be grouped together. Xanthoma diabeticorum should really be called by another name. It was a skin affection due to transient glycosuria and in every case the external lesions promptly faded after the sugar disappeared from the urine. In diabetes mellitus we had to deal with a chronic toxemia which might produce the most profound systemic effects.

Dr. Pollitzer said that eleven years ago he presented a paper on this subject in which he held that there was no essential difference between the xanthoma of diabetics and that observed in non-diabetics, and his opinion in that respect had remained unchanged. While xanthoma was occasionally associated with tuberculosis, that was not surprising when we bore in mind the fact that probably not more than 10% of all people in the world escaped tuberculosis.

Dr. A. R. Robinson, of New York, said that eighteen years ago, at Berlin, he presented a paper on this subject, in which, as the result of his histological findings, he expressed the view that there was no difference between xanthoma diabeticorum and xanthoma tuberculosum, excepting that the latter lesions were of slower development.

Dr. Thomas C. Gilcrist, of Baltimore, said he had tried to explain some of these eruptions from the standpoint of elimination and by regarding the sweat apparatus as an eliminative organ analogous to the kidneys.

Dr. Pusey said that Dr. Gilcrist's idea in regard to the elimination of irritants by the sweat glands as a causative factor did not strike him as a very strong or plausible one, at least in this particular instance, as over 6,000 ccm. of urine were passed daily, and there was practically no elimination by the sweat glands. The patient had the driest skin he ever saw. Personally, he was more inclined to refer the condition to a toxic substance acting through the blood.

ECZEMA OF THE TOES.

Dr. E. Wood Ruggles, of Rochester, N. Y., in this paper, said that eczema of the toes, judging from its infrequent or cursory mention in both textbooks and articles on dermatology, was either a rare or a very unimportant affection. The only description of the condition which was at all complete or accurate was that given by Jamieson ("Diseases of the Skin," London, 1892). As regarded its etiology, several factors seemed to act as predisposing causes. In all of Dr. Ruggles' cases, the patients had been brain workers. Patent leather shoes, which caused maceration of the skin by confining the perspiration, thus giving the effect of a poultice, acted as a contributory cause. Habitually cold feet, especially those which become clammy, while their possessor was engaged in mental toil, were also subject to this affection. Millions of mortals, however, presented these predisposing causes, yet few acquired eczema of the feet, and the proper explanation of at least most of these cases was that the chief cause resided in the presence of a broken-down transverse arch of the foot. The symptoms of the condition were of gradual development, with a peculiar smarting, pruritus and maceration and the development of fissures. There was a tendency to heal without treatment and to relapse without apparent cause. As regarded treatment, the first essential was cleanliness; the next measures which would avoid perspiration, such as the wearing of cotton footwear and of properly constructed shoes, made of non-glazed leather. These should be of the so-called orthopedic shape, abundantly wide, so as not to compress the toes, and possessing a transverse arch to maintain them in their normal position. The best local treatment consisted in bathing the feet once or twice daily in cold water, drying them, and then applying with a camel's hair brush a 10% solution of tannic acid and 2% of salicylic acid in alcohol. This preparation also acted as an effective prophylactic. For severer cases, and especially for those in which enough fissuring existed to render this lotion quite painful, a 10% to 20% of tar ointment with zinc oxide and cold cream were preferable, to be followed by the lotion when the condition was sufficiently improved.

Dr. Fox, in speaking of the etiology of eczema of the toes, emphasized the importance of poor circulation as a factor, often associated with hyperidrosis, insufficient heart action or improper footwear. As regarded the treatment, the wearing of broad, square-toed shoes was more beneficial than anything else that he knew of, and not infrequently effected a cure in cases where ointments and lotions had been used without success.

Dr. Hyde said that in listening to Dr. Ruggles' paper the question arose in his mind whether these were really examples of eczema. In the causation of the condition he was inclined to regard anemia as a prominent factor. Many of the patients were young girls who suffered from cardiac disturbance and did not menstruate properly. Another group of cases was composed of men whose circulation was impaired by the tobacco or alcohol habit, or both.

Dr. Pollitzer said he could recall instances of this affection where the eczema was not limited to the toes, but was also found on other parts of the foot. He was prepared to believe that badly formed shoes or a deformed foot played some rôle in the development of these eczemas, and especially had some bearing on the course of the eruption.

A STUDY OF ACNITIS, WITH REPORT OF AN EXTENSIVE CASE.

Dr. Jay Frank Schamberg, of Philadelphia, read this paper. He said that in 1891 Barthelemy published three cases of a peculiar affection to which he gave the designation "acnitis." As Crocker pointed out, this was probably the same disease as that described by Tilbury Fox in 1878 under the title of disseminated follicular lupus. In the case reported in detail by Dr. Schamberg, the lesions consisted of papules and tubercles, varying in size from a minute pinhead to the size of a pea. They were scattered over the entire face, but showed a tendency to grouping in certain areas. The greatest aggregation of lesions was over the chin, where they were closely studded. When the patient was first seen, the total lesions on his face numbered 347. The color of the lesions generally was of a brownish-red. A number of them appeared to be undergoing central necrosis and suppuration about the hair follicles, although there were no distinct pustules present. Some of the lesions exhibited a waxy and glistening appearance. At a little distance the eruption bore considerable resemblance to a well-marked discreet smallpox. They gradually underwent involution, and upon disappearing they left oval, linear and irregular pittings which were brownish in color. During the entire course of the disease, which lasted several months, the lesions had been almost exclusively limited to the face.

Dr. Schamberg said that as the result of an exhaustive study of this case there was but little basis for the assumption that acnitis was of tuberculous origin. The character of the lesions, the course of the disease and the microscopic picture suggested a parasitic granuloma. It might be concluded that the affection under consideration was a disease *sui generis*. The designation "acnitis" was to be preferred to acne agminata (Crocker), acne telangiectodes (Kaposi), disseminated follicular lupus (Tilbury Fox) or hydradenitis destruens suppurativa (Pollitzer) by reason of the priority of Barthelemy's description, the brevity of the term and the fact that it was non-committal so far as the etiology and pathology of the disease were concerned.

Dr. Fordyce said he had recently been studying this subject in connection with several cases of necrotic granuloma, in which the lesions were similar in appearance. A careful study of three cases during the past year, however, had convinced him that they were distinct from acnitis, although they had some features in common.

Dr. Hartzell said he had seen the case described by Dr. Schamberg, and if this was to be regarded as a typical case, he had no hesitation in saying that it differed very decidedly from folliculitis. It was certainly a very extraordinary disease, and appeared to be a disease *sui generis*.

Dr. Joseph Zeisler, of Chicago, said he had been strongly opposed to the use of the name "acnitis" ever since the appearance of Barthelemy's original article in 1891. To his mind the name was revolting in a philological sense and did not signify anything, Personally, he was inclined to doubt the necessity of establishing this condition as a new disease, and he questioned whether it did not come under the term of folliculitis.

Dr. Pollitzer said the case had impressed him as being a perfectly typical one of this disease, and the eruption was exactly like that he had himself described in 1891 under the name of hydradenitis destruens suppurativa. He thought there was no question that it was no disease *sui generis*, and as to its relation to folliculitis, he found it much easier to think of differences between them than resemblances.

Dr. Corlett said that in Dr. Schamberg's case he had been particularly impressed by the rapid course of the disease.

Dr. Fox said that from the picture drawn by Dr. Schamberg he was convinced that he had seen half a dozen or more cases of this disease, and in one of his earlier cases he had made the diagnosis of lupus disseminatus. Some of the lesions were submitted to Dr. George T. Elliot, of New York, for histological examination, and he reported that the tubercle bacillus was present. In one or two cases which he saw subsequently no tubercle bacilli were found. In several similar cases seen more recently he was quite convinced that they were similar to those described by certain English writers under the name of colloid milium.

Dr. Hyde, speaking of the term "acnitis," said that while he agreed with what had been said in criticism of it, at the same time he hoped it would stand. He did not see why we should select this particular name upon which to empty the vials of our wrath when there were so many others in dermatological nomenclature that were even worse.

Dr. Schamberg, in closing, said that while the word "acnitis" might be regarded as a philological hybrid, we needed a name for this affection, and this was the one that had been applied to it by Barthelemy. In the case he reported, some of the nodules very distinctly suggested lupus, as in the case referred to by Dr. Fox.

(To be continued.)

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Book Reviews.

Textbook of Nervous Diseases and Psychiatry. By Charles L. Dana, A.M., M.D., LL.D. Seventh edition. 8vo. Pp. xii, 782. With 261 engravings and 3 plates in black and colors. New York: William Wood & Co. 1908.

We have so repeatedly commended the textbook of Dr. Dana in these columns as the best shorter treatise on nervous diseases with which we are acquainted that any extended notice of this new edition would be superfluous. It is emphatically a new edition, and not a reprint of the old edition with a few additions. It contains 79 new illustrations and nearly one hundred pages of text, and, in addition to various new sections, there is scarcely a page but what shows alterations. Among the more important additions may be noted an account of Head's recent theories on sensibility; a study of alcoholism as an etiological factor; sections on diet, psychotherapy, neurofibromatosis, combined sclerosis, aphasia, rabies, and sleeping sickness, and important additions to the chapters on diseases of the peripheral nerves, tabes, multiple sclerosis, apoplexy, brain tumor, syphilis, neurasthenia, myoclonia and epilepsy. To the section on mental diseases Dr. G. H. Kirby has added a considerable number of illustrative case histories. The whole work manifests the thorough knowledge and sound sense of the author. One singular omission in a work so thoroughly up to date may be noted, and that is the failure of any reference to the Oppenheim reflex, the value of which has been so thoroughly established. It is much to be regretted that a work of such value should still be marred by such wretched proofreading. Minor errors are to be encountered everywhere, and the references of former editions to illustrations or paragraphs now omitted are too often left unchanged.

Injuries of Nerves and their Treatment. By James Sherren, F.R.C.S. Eng. 12mo. Pp. viii, 310. With 20 plates and 25 illustrations. New York: William Wood & Company. 1908.

This book is based almost wholly upon original material, — the cases of nerve injury studied by the author and Dr. Head in connection with their researches upon sensibility. The writer classifies nerve injuries under two heads: those with complete and those with incomplete interruption of continuity, either of which may be anatomical or physiological. The writer gives the symptoms of nerve injury, including the different forms of disturbance of sensibility, in its epicritic, protopathic and deep forms as described by Head. The general lines of treatment are to maintain the nutrition of the parts supplied by the injured nerve, to prevent overstretching of the paralyzed muscles and contracture of their antagonists by splints or other apparatus. All patients with accidentally inflicted wounds should be examined for evidence of nerve injury, and all wounds should be explored for evidence of such injury. If injury exists, primary suture should be performed. In subcutaneous injuries, if, at the end of a fortnight, reaction of degeneration is found, the nerve should be exposed and, if necessary, sutured. Secondary suture has been successful after three years. If there be a gap between the ends of the nerve it may be bridged over by nerve transplantation, tubular suture or nerve anastomosis. The remainder of the book is devoted to the study of injuries of individual nerves and adds much to our knowledge of their muscular supply and sensory distribution. The work will prove indispensable to every surgeon and neurologist who have to do with nerve injuries.

A Manual of Midwifery. By Thomas Watts Eden, M.D., C.M. (Edin.), F.R.C.P. (London), F.R.C.S.Ed., Obstetric Physician with charge of Out-Patients, Charing Cross Hospital. Second edition. Cloth. Pp. 555. Printed in Great Britain. Chicago: W. T. Keener & Co. 1908.

The author has attempted in this manual to give a "practical and adequate" exposition of the theories held and the methods used at the present time in England. That these methods are always the best are, in the reviewer's opinion, open to question. The book is well planned, well written, and the author's meaning is always clear. The author describes the operations of forceps and version in the lateral position, with plates illustrating them. Even with the clearness of his description, and by the aid of the plates, he does not convince the reviewer of the advantage of this position over the usual American one. Pubiotomy the author passes over with scant consideration, and the paragraphs on the repair of the perineum are strangely inadequate. Artificial feeding is disposed of in much too cursory a manner and had much better been eliminated entirely, referring the reader to a standard book on pediatrics. There are many little points where American obstetricians will not agree with the author; the major part of the work, however, is excellent. The illustrations are many, the majority not original, but on the whole serve well to make the text clear. [R. L. De N.]

The Riddle of Personality. By H. Addington Bruce. Pp. i–xiii, 297. New York: Moffat, Yard & Co. 1908.

This is a useful book on questions of much present interest. It is written in a sane and judicial spirit at times lacking in discussions of this character. An appreciation of the best that is being written on the subject of the "Subconscious" and similar problems is evident. The book derives an added interest from a critical discussion of the work of the Society for Psychical Research, with an attempt to show the correlation of its researches with those now going forward in the field of abnormal psychology. We have no hesitation in recommending this book, especially to that class of readers whose knowledge of the subject is not profound, and who desire a brief statement of the present status of our knowledge of personality in its broader aspect. A useful chapter on "Hints for Further Reading" is appended.

Thinking, Feeling, Doing. An Introduction to Mental Science. By E. W. Scripture, Ph.D., M.D. Second edition, revised. Illustrated. New York and London: G. P. Putnam's Sons. 1907.

Under the suggestive title, "Thinking, Feeling, Doing," Dr. Scripture presents the second edition of a small work on experimental psychology and its methods. The subject-matter consists of such topics as reaction time, power and will, touch, smell and taste, color sensitiveness, feelings, emotions, moods, attention, memory, materialism and spiritualism in psychology, and allied topics. The volume is amply illustrated and written in such a way as to be wholly intelligible to elementary students. A careful reading of it cannot fail to be of value to the practising physician who, as a rule, is too far removed from this increasingly important branch of study. The first edition of the book proved a success, and twenty thousand copies are said to have been sold. Seven years have elapsed between the first and second editions. We commend the book, not only to psychologists, but also to physicians in whatsoever line of practice.

The Treatment of Gonorrhea in the Male. By Charles Leedham-Green, M.B., F.R.C.S., Surgeon to the Queen's Hospital, Birmingham; Surgeon to the Birmingham and Midland Hospital for Children; Consulting Surgeon to the Birmingham General Dispensary. Second edition. New York: William Wood & Co. 1908.

This book of 156 pages, an index and a list of 47 illustrations contains nothing new. Its title is partly a misnomer, as the book devotes more attention to the subject of gonorrhea in general than to its treatment. It is a brief summary of the generally accepted views on matters pertaining to its subject. Its illustrations are simple and instructive, and its final chapter of a few pages, on "The Proof of the Cure of Gonorrhea: Its Bearing on Marriage," is worthy of attention as a brief, clearly expressed summing up of the details of the careful examinations necessary before pronouncing such cases cured.

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RELATION OF THE HARD PALATE TO DEGENERACY.

The study of degeneracy and its so-called stigmata is occupying less attention than in former years. The exaggerated importance given by certain investigators to physical defects in the determination of mental aberration has certainly not been justified by later painstaking researches. Among the most valuable contributions to the general subject has been Dr. Walter Channing's study of the hard palate in feeble-minded and normal individuals. Dr. Channing has written and spoken much on this subject during the past ten years and recently, in conjunction with Clark Wissler, Ph.D., has summarized his final conclusions in a publication under the auspices of the American Museum of Natural History. It is of interest that Channing's early conclusions are in great measure substantiated by this latest and most painstaking work.

Some forty years ago Dr. G. J. Down, at the head of an asylum for the feeble-minded in England, advanced the theory that the hard palate of congenitally feeble-minded individuals was markedly less in width than that of intelligent persons of the same age. He also laid stress upon the so-called V-shaped palate and regarded a certain form of palate as pathognomonic of congenital idiocy. These somewhat radical statements attracted considerable attention with the development of divergent opinions. In order to make a personal refutation or confirmation of Down's conclusions, Channing had casts made of the palates of a 1,000 feeble-minded persons and 500 presumably normal school children. The result of this investigation contradicted in great measure Down's radical conclusions. Channing found that two fifths of the palates were of fairly good shape; that the palates of normal persons may be deformed; that there is no difference in the kind of deformity occurring in the feeble-minded; that children under eight years of age, whether normal or idiots, probably show no marked difference; that there is no form of palate peculiar to idiocy and that it remains to be proved that the palate of whatsoever shape is to be regarded as a stigma of degeneracy. Channing furthermore at that time made the statement that the deformed palate was merely to be regarded as one of an indefinite number of indications of imperfect anatomical development. The decade which has supervened since these original statements were made have certainly borne out Channing's main contention. Individual defects have come to be regarded as less and less significant, and with the introduction by Walton of the excellent term "deviation," much less is heard of the whole subject of degeneracy, particularly as determined by fortuitous physical signs.

This latest publication on the snbject is particularly valuable as verifying by the most accurate scientific means at our disposal the earlier conclusions reached by Channing and others. An anthropometric method has been used in studying a large number of casts, with the general result of entirely confirming data arrived at by less accurate methods. This further study shows that there is a slightly greater variability in the palates of the feeble-minded, but that it is impossible to substantiate the assumption that these palates are relatively narrow. Certain important new facts have been determined regarding growth and dentition, but these have no direct bearing upon the main problem at issue. This research, worked out with mathematical exactness, cannot fail to serve both as a model for further investigation in correlated fields and as a somewhat final word in the particular investigation at issne.

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CHILD LABOR.

A meeting of the Boston Medical Library in conjunction with the Suffolk District Medical Society of more than usual interest was held the early part of this month. President C. W. Eliot, of Harvard University, who presided, was introduced by Dr. George B. Shattuck, president of the Boston Medical Library. In the course of his preliminary remarks, President Eliot spoke of the pre-eminence of Germany in restrictive child labor legislation and also in that of technical training. Mr. Everett W. Lord, secretary of the National Child Labor Committee for New England, spoke of the work of that organization, and was followed by Mr. Charles F. Gettemy, chief of the Massachusetts Bureau of Statistics of Labor, who discussed recent legislation in Massachusetts affecting children. Dr. J. E. Goldthwait spoke on the effect of attitude on the development of the child and the relation of poise to the general health in adult life, and brought out many matters of much importance. A very significant contribution, not announced on the program, was made by Dr. T. M. Rotch concerning a method of determining the stage of development of the child by means of the Röntgen ray. Dr. Rotch showed that the present plan of estimating the capacity for work by the age of the person concerned is largely erroneous, inasmuch as the development of children varies within very wide limits. It is, for example, perfectly possible that a child of thirteen may be so far developed as to bear the strain of work very much better than a child several years older whose development has been slow or retarded for any reason. In other words, the chronological method of determining the capacity for work should give place to an anatomical method, and this has now been rendered possible by the application of the Röntgen rays and by the determination through this means of the state of development of the bony system, which may with justice be taken as a criterion of general development. Dr. Rotch maintained, and we believe with reason, that legislation regarding child labor should in the future take account of the facts which are now anatomically demonstrable, and should determine the fitness for work on this basis rather than on the time element alone. It is evident that the complete application of the principle outlined would require much careful study and investigation, but it is not to be questioned that were it generally adopted it would lead to a more rational consideration of the great social problem underlying the employment of children in the industries.

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HIGHER DEGREES IN THE MEDICAL SCIENCES.

For a number of years it has been apparent that universities giving degrees must take more account of the medical sciences as subjects in which such degrees may be granted. So long as medicine was largely empirical, it was quite proper that higher degrees should not be bestowed for work accomplished primarily in medical schools. The situation has, however, now so far changed, and the medical sciences, through the development of recent years have been shown to be so closely associated with other fundamental branches of knowledge that such discrimination is no longer possible. University authorities, however, have been slow in recognizing this fact and through a natural, if not justified conservatism, higher degrees, other than that of doctor of medicine, have been denied special students in the medical sciences. The recognition of medicine as a branch of the liberal arts has at length come, though somewhat tardily, and universities are increasingly granting degrees hitherto unavailable for students of medicine. It has, for example, very recently been voted by the faculty of Arts and Sciences of Harvard University that a division of the medical sciences be constituted within that faculty. It has also been voted by the same faculty that medical sciences be added to the list of subjects in which the degrees of S.B. and Ph.D. are given and that medical sciences be likewise added to the list of divisions in which the degree of S.M. is given. When such provisions are universally made, as no doubt will be the case, the final breach which has so long existed between the profession of medicine and other branches of liberal learning will be permanently bridged — a consummation much to be desired.

MEDICAL NOTES.

Vindication of Dr. S. A. Knopf. — It will be remembered that Dr. S. A. Knopf was wrongly quoted in a prominent Philadelphia journal in connection with a discussion on the treatment of tuberculosis at a meeting held in Washington, May 7, 1907. The statements published were so at variance with the facts that Dr. Knopf saw fit to bring suit against the paper in question, with the result that the matter has now been settled by compromise to the entire satisfaction of Dr. Knopf and of others in the medical profession who recognize the importance of correct public statements in matters relating to medicine.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Dec. 15, 1908, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 89, scarlatina 49, typhoid fever 18, measles 21, smallpox 0, tuberculosis 39.

The death-rate of the reported deaths for the week ending Dec. 15, 1908, was 20.11.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Dec. 12, 1908, was 208, against 298 the corresponding week of last year, showing a decrease of 90 deaths and making the death-rate for the week 17.53. Of this number 96 were males and 112 were females; 201 were white and 7 colored; 131 were born in the United States, 74 in foreign countries and 3 unknown; 53 were of American parentage, 124 of foreign parentage and 31 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 80 cases and 9 deaths; scarlatina, 60 cases and 3 deaths; typhoid fever, 5 cases and 2 deaths; measles, 17 cases and 1 death; tuberculosis, 45 cases and 14 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 30, whooping cough 3, heart disease 21, bronchitis 5 and marasmus 3. There were 13 deaths from violent causes. The number of children who died under one year was 35; the number under five years 59. The number of persons who died over sixty years of age was 61. The deaths in public institutions were 76.

Cerebrospinal meningitis, 4 cases and 1 death.

Deducting deaths of non-residents, the total is 182. The corrected death-rate is then 15.34.

Deaths during the Hunting Season. — It is reported that 30 deaths have occurred during the hunting season just closed in Maine, 27 through the careless use of firearms, either in the hands of other persons or the result of the victims' own carelessness, and 3 by drowning. Many others were more or less seriously injured.

New England Pediatic Society. — At the annual meeting of the New England Pediatric Society, held in Boston on the 28th of November, 1908, the following officers were elected: Dr. Chas. W. Townsend, President; Dr. Addison S. Thayer, Vice-President; Dr. Fritz B. Talbot, Secretary and Treasurer; Drs. John Lovett Morse, Charles P. Putnam, Arthur H. Wentworth, Members of the Council.

Meeting of Plymouth District Medical Society. — The quarterly meeting of the Plymouth, Mass., District Medical Society was held in Brockton recently. The main paper of the evening was given by Dr. Joseph H. Pratt, of Boston, on the subject, "Recent Advances in the Pathology of Typhoid Fever and Their Clinical Significance." The general subject was discussed by the members present at considerable length. One member reported two cases of typhoid fever with double parotiditis. The report of the committee on tuberculosis was received and its recommendations adopted.

Manila University of Santo Tomas. — The current general bulletin of the Manila University of Santo Tomas is of interest in its historical relation. It was founded in 1611, nineteen years before the settlement of Boston, and twenty-five years before the foundation of Harvard College. It "is an outgrowth of the early educational labors inaugurated by the Dominican Order shortly after the arrival of the first missionaries in the Philippine Islands in 1587. From humble and informal beginnings, characteristic of pioneer days, the work was gradually carried on to a degree of organized efficiency at once adapted to the particular needs of the new province and worthy of the traditions of the Order. With the first foreshadowing of an institution modeled after the great universities of Spain, the name of the third Archbishop of Manila, the Most Rev. Miguel de Benavides, O.P. (died 1605), is lastingly associated. In a bequest consisting of his library and goods to the value of 1,500 pesos, he gave the nucleus of a fund towards an enterprise whose primary aim was the formation of a body of men specially fitted to promote the Christianization and education of the native inhabitants of the Archipelago."

NEW YORK.

Dedication of a Children's Ward. — The Daisy Ward of Christ Hospital, Jersey City, was recently dedicated and formally opened by Bishop Lines, of the Protestant Episcopal Diocese of Newark. This new ward is designed exclusively for children and the money for its construction, $11,000, was raised mainly through the appeals of a little paper, "The Daisy." Christ Hospital, which was founded by the Rev. Dr. Abercrombie, of St. Matthew's parish, last year treated 1,829 patients, of whom 820 were free.

Pellagra. — Dr. Charles L. Dana has recently returned from Italy where he has been making a study of the disease known as pellagra, which in addition to other serious conditions, causes a progressive breakdown of the nervous system and usually culminates in imbecility and insanity. Until now the peasants of Northern Italy have been the chief sufferers from the disease, which is attributed to the eating of inferior grades of Indian corn meal infested with a certain fungus growth; but recently it has appeared in the southern states of this country, and a commission from the United States Department of Agriculture is at present making an investigation in Italy, with a view to the prevention of the disease.

Infants' Science Academy. — There has just been incorporated the "Infants' Science Academy," by Drs. Christopher J. Patterson, who was for ten years on the staff of the Buffalo State Hospital, and Nathan S. Roberts. The *raison d'être* for the institution, which is designed to be chiefly charitable in character, is stated to be the existing deplorable ignorance of women in regard to the care of infants, and its objects are given as "the scientific study of infants; their health, care, diseases and physical development, and for the interest of mothers in all that pertains to the care of infants."

Meeting in Connection with Tuberculosis Exhibition. — On the evening of Dec. 4, a meeting of the medical profession was held in connection with the International Tuberculosis Exhibition. Dr. H. M. Biggs, general medical officer of the City Health Department, presided, and the program included addresses by Dr. Lawrence Flick, of Philadelphia, on "Some Lessons from the International Tuberculosis Congress"; Dr. Edward L. Trudeau, of Saranac Lake, on "Some General Considerations of the Tuberculosis Problem"; Edward T. Devine, general secretary of the Charity Organization Society, on "The Physician's Responsibility toward Tuberculosis as a Social Problem"; Dr. Simon Flexner, director of the Rockefeller Institute, on "Certain Phases of Immunity in Tuberculosis"; and Dr. Joseph D. Bryant, ex-president of the New York Academy of Medicine, on "Recollection and Realization in Some Tuberculosis Problems." Dr. Biggs, in his opening remarks, stated that the campaign against the disease in the city of New York was at present saving 6,000 lives a year, and Dr. Flexner in the course of his address said that an interesting confirmation of the view that growth of tubercle bacilli in a restricted way in the body produces results different from such growth in a culture tube might be seen in the method introduced by Heimans for protecting cattle from tuberculosis infection. During the first few weeks the animals reacted to a tuberculin injection quite as they did as a result of localized lesion, but later as the immune state became established, they reacted less and less and finally not at all, being now highly resistant to artificial and even to natural infection. In some such way it might perhaps be hoped that the general problem of establishing immunity against the disease eventually might be solved.

International Tuberculosis Congress Exhibit. — The International Tuberculosis Congress exhibit at the American Museum of Natural History was thrown open to the public on Nov. 30, at 10 A.M., and between that hour and 10 P.M. it was visited by 10,000 persons. In the evening it was formally opened by Mayor McClellan, who was introduced by President DeForest of the Charity Organization Society, under the auspices of which the exhibition is being held. In the course of his remarks the mayor referred to the lowering of the death-rate from tuberculosis in the city since the campaign against the disease had been inaugurated. In 1885 the rate from pulmonary tuberculosis and tuberculous meningitis in children under fifteen was .67 per 1,000, and in 1906, .26 per 1,000, a decrease of more than 55%. In 1886 the rate among those of all ages from tuberculous diseases was 4.42 per 1,000, while in 1907 it was 2.42 per 1,000, a decrease of over 40%. Prof. Henry Fairfield Osborne, president of the Museum, in welcoming the exhibit, expressed the opinion that the selection of this place had been well made, as education was the chief reason for the existence of the institution. He thought it eminently proper, also, that this, the greatest tuberculosis exhibit ever conceived, should be held at the museum, where the first exhibit of the kind even seen in the world had been held. Health Commissioner Darlington gave expression to the universal feeling of regret at the absence on this occasion of Dr. Alfred Meyer, through whose indefatigable efforts chiefly the holding of the exhibition in New York had been rendered possible. This, he explained, was due to sudden illness and breakdown in consequence of the hard work he had done in the matter, and he then proceeded to read the address which Dr. Meyer had prepared for the opening ceremonies. On the second day of the exhibition the number of visitors was equal to that on the opening day, and on the third day the attendance was no less than 16,000.

International Tuberculosis Exhibition. — The International Tuberculosis Exhibition continues to attract much public attention. During the first week the attendance amounted to 143,951, nearly one third of the 500,000 visitors which those in charge of the exhibit hoped would attend during the six weeks it is to be held. On the first Sunday after the opening, when the hours were only from 1 to 5 P.M., nearly 45,000 were present, and the crowding was so great that the various demonstrations, under the supervision of Dr. Philip Van Ingen, had to be discontinued. An interesting feature in connection with the exhibition is a model dairy, showing a clean cowshed and the most approved methods of keeping both cows and milk clean. On Dec. 7, it was announced at the exhibition that the New York Milk Committee, which, under the auspices of the Association for Improving the Condition of the Poor, has for the past three years been investigating conditions in the city and endeavoring to prevent infant mortality by work in tenement-houses and elsewhere, had formally approved of the pasteurization of all milk which has not been produced under sanitary conditions, which has not come from tuberculin-tested cattle and cattle otherwise free from disease and which cannot be supplied to the consumer with a sufficiently low bacterial content to offer safety from milk-borne infection; also that the committee approves of pasteurization of milk when modified for infants' use in the home. The medical members of the milk committee are Drs. Alexander Lambert, Haven Emerson, David Bovaird, and Linsly R. Williams. On Dec. 8, a mass meeting of medical students was held at the exhibition and about 2,000 students were present. Dr. Edward I. Janeway presided and made the introductory address, and other addresses were: "Municipal Control of Tuberculosis," by Dr. H. M. Biggs; "Diagnosis and Prognosis in Early Tuberculosis: Their Importance in Relation to Sanatorium Treatment," by Dr. Walter B. James; "The Future Attitude of the Profession toward Tuberculosis," by Dr. Woods Hutchinson; "The Present and Future Treatment of Pulmonary Tuberculosis," by Dr. Wm. Gilman Thompson; "The Winning Fight against Tuberculosis," by Dr. John B. Huber; "The Responsibility of the Family Physician toward Tuberculosis," by Dr. S. A. Knopf. In the course of his remarks Dr. Hutchinson said that there were persons present who would live to see tuberculosis as nearly extinct as leprosy or smallpox. Having referred to the decline of other diseases, he went on to say: "From this point of view the future for the doctor is a bit discouraging, but I also see signs of encouragement for this is the dawn of the new doctor. The time is rapidly coming when two thirds of the doctors will be in the employ of the community, either as inspectors in the schools or on boards of various kinds. The day is near at hand also when the doctor will no longer be engaged to patch up the sick man, but to prevent him from getting sick. . . . Each family will select its doctor and pay him so much a year per capita."

Current Literature.

MEDICAL RECORD.

Oct. 17, 1908.

1. **Roberts, D.** *The Diagnosis of Peptic Ulcer*
2. ***Taylor, J. M.** *The Rational Treatment of Splanchnoptosis; Displacement of Viscera, both Abdominal and Thoracic.*
3. **Robinson, B.** *The Personal Factor in Disease.*
4. **Hall, J. N.** *Abscess of Lung from Ascending Infection from Appendicitis, with Report of Cases.*
5. **Thomas, J. D.** *Gonorrheal Septicemia, with Marked Cardiac Involvement.*
6. **Ward, W.** *Vessel Anastomosis by Means of Rubber Tubing.*

2. Taylor discusses the subject of splanchnoptosis, emphasizing the grave disturbances that may be caused by it. He looks for the cause far back in the origins of growth and development, and in a neurasthenic tendency. To treat the condition rationally, measures must be taken to develop the supports and to secure tone of the muscles of the torso. The author believes that no muscles are so neglected as those of the diaphragm, the external abdominal muscles and those involved in respiration. He recommends systematic breathing exercises and artificial abdominal supports, suggesting as a satisfactory support the one devised by Longstreth. Finally he directs attention to the importance of massage and manipulation of the paravertebral muscles, with the idea of stimulating the circulation through the vasomotor nerves. [W. B. R.]

Oct. 24, 1908.

1. ***Stern, H** *Thoracic Perioste-edema of Angioneurotic Origin.*
2. **Seymour, N. G.** *Some Features of the Present Crusade against Tuberculosis in New York City.*
3. **Calleja, C.** *Eupyrexia.*
4. **Walsh, J. J.** *Early Medical Schools and Legal Regulation.*
5. **Wile, I. S.** *Interpretation of Blood Examinations.*
6. **Wolbarst, A. L.** *A Contribution to the Subject of Syphilitic Prophylaxis by the Use of Calomel Ointment. Report of a Case.*

1. Stern discusses five cases of thoracic perioste-edema of angioneurotic origin. He concludes that this condition occurs much more frequently than is generally supposed; it is closely related to the acute circumscribed superficial edema, with which it may be associated. It may be the external manifestation of periosteal swellings on the inner side of the thorax, or it may be the visible evidence of possible angioneurotic edemata of the mucosa of the respiratory tract disturbing the intrathoracic equilibrium. If rightly interpreted it will always prove of diagnostic aid. The phenomenon, which is of a fleeting nature, but tends to recurrence, appears oftener in women than in men and seems to stand in some connection with the catamenia. A prognosis as to the period of its ultimate disappearance cannot be made, but the outlook concerning its gradual diminution and that of its concomitants is very encouraging. The phenomenon requires no treatment in the majority of cases; remedial measures, however, when indicated, invariably call forth temporary and, occasionally, also, more lasting amelioration of the subjective and objective symptoms. [W. B. R.]

NEW YORK MEDICAL JOURNAL.

Nov. 28, 1908.

1. **Knopf, S. A.** *The Red Cross in the Anti-Tuberculosis War. A Plea for Contributions through a Christmas Stamp.*
2. **Mason, C. F.** *The International Classification as Applied to Morbidity Returns.*
3. **Guilfoy, W. H.** *At What Age Periods and in What Measure has the Reduction in the Mortality Rate from Tuberculosis manifested Itself in the City of New York during the Past Forty Years?*
4. ***Frank, R. T.** *A New Method for the Transfusion of Blood.*
5. **Wood, C. E.** *The Public Health Plank.*
6. **Knott, J.** *Iron.* (Concluded.)
7. **Bergeron, P. N.** *A Case of Adiposis Dolorosa with Involvement of the Large Nerve Trunks.*

4. Frank reports the results of an experimental study of blood transfusion. Instead of establishing an anastomosis between artery of donor and vein of recipient by suture or some mechanical device, he prepares beforehand a blood-vessel obtained from an animal (preferably a dog's carotid) and uses this as a "vascular bridge." He has not yet tried this method on human subjects. [L. D. C.]

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

Nov. 28, 1908.

1. **Hartzell, M. B.** *The Nature and Causes of Eczema. Chairman's Address. Section on Cutaneous Medicine and Surgery, June 2–5, 1908.*
2. **Remington, J. P.** *Relation of Pharmacy to Medicine.*
3. **Connor, L.** *Ophthalmology for General Practitioners.*
4. ***Wilson, O. H.** *The Ocular Reaction to Tuberculin.*
5. ***Gillhorn, G.** *Abnormal Secretion from the Mammary Glands in Non-Pregnant Women.*
6. **Holmes, R. W.** *Ablatio Placentae. Premature Detachment of the Normally Situated Placenta.*
7. ***Houghton, E. M., and Merrill, C. H.** *The Diuretic Action of Adrenalin and the Active Principle of the Pituitary Body.*
8. ***Wright, B. L.** *The Treatment of Tuberculosis by the Administration of Mercury.*

4. Wilson, in discussing the ocular tuberculin reaction, believes that (1) a positive reaction is a fairly reliable evidence of the existence of tuberculosis.

(2) A negative result does not exclude the possible presence of tuberculosis.

(3) In properly selected cases and with tuberculin of proper strength the test is free from any serious danger.

(4) Tuberculin solutions of 0.5% are to be preferred in all cases. Solutions of greater strength should rarely be employed.

(5) The test is of value from the standpoint of prognosis, a prompt and vigorous reaction indicating that the patient is successfully combating the disease.

(6) Very advanced or moribund cases fail to react; also cases of miliary tuberculosis.

(7) The administration of tuberculin in moderate amounts subcutaneously will not develop the reaction in healthy persons; for tuberculous patients it accentuates the pre-existing inflammation and may cause the appearance of the reaction.

(8) In the great majority of cases no constitutional symptoms are associated with the reaction. No alteration occurs in the physical signs such as frequently occurs following tuberculin subcutaneously.

(9) The test should not be resorted to if the diagnosis can be made by physical signs and symptoms.

5. Gillhorn reviews a large number of cases of abnormal secretion of the mammary gland and shows that lacteal secretion does not only occur in pregnancy and puerperium, but that it may appear in the newborn, in the growing child, in the adult virgin and in the old woman. He urges more careful statistics, because of its medicolegal importance.

7 Merrill and Houghton, in their experiments with adrenalin and the extract from the pituitary body, show that these two substances act similarly in rising blood pressure by producing peripheral stricture of the vessels. The latter substance, however, sustains increased pressure for a longer time than the former. But repeated use of the pituitary extract produces no rise at all. This extract, however, produces a marked diuresis and Schafer claims that while it constricts the peripheral vessels it dilates the kidney vessels and also has a specific action on the secreting cells of the kidney.

8. Wright has an interesting article on the treatment of tuberculosis with mercury. In no case has harm been done, and improvement has occurred in 85% of cases

treated, not only general improvement, but actual diminution of physical signs and a great decrease in the death rate. Even very advanced cases were treated and the results have been uniformly better. He prefers the subcutaneous injection of small doses, with intervals of rest from treatment. [E. H. R.]

The Lancet.

Nov. 21, 1908.

1. *Pavy, F. W. *The Pathology and Treatment of Diabetes Mellitus: Lecture I.*
2. *Gowers, W. R. *Heredity in Diseases of the Nervous System.*
3. *Bashford, E. F. *Heredity in Cancer.*
4. *Latham, A. *The Influence of Heredity upon Tuberculosis.*
5. *Hurry, J. B. *Vicious Circles Associated with Disorders of the Digestive System.*
6. Maloney, W. J. *Multiple Vesical Calculi.*
7. *Watson, D. C. *The Diagnosis and Treatment of Pancreatitis.*

1. Pavy, in his first lecture on diabetes mellitus, considers the history of the development of our knowledge of this disease and dwells particularly on the work of Van Noorden, with whose views he does not entirely agree, particularly in regard to the so-called glycogenic doctrine which Van Noorden supports. He speaks at length in regard to the physiology of the circulatory and digestive system, in regard to the assimilation of carbohydrates, and emphasizes the fact that normal urine contains a certain amount of sugar. He speaks at length on the experimental work done by Hill, Halliburton and others on the intravenous injection of sugar and carbohydrates, and discusses the conclusions which they reach. He speaks of the various cures which have been introduced, particularly Mossé's "potato cure" and Van Noorden's "oat cure," which he does not believe have any physiologic basis.

2. Gowers discusses heredity in diseases of the nervous system and considers certain groups of nervous disorders in which heredity seems to play an important part. One of the most typical cases of this is that peculiar condition known as pseudo-hypertrophic paralysis, which is transmitted in the female line, affecting only sons. Another class of hereditary nervous conditions includes the so-called heredo-ataxy of Marie, Huntington's chorea and Thomsen's myotonia congenita. A third class of diseases in which heredity is operative consists of the so-called functional affections, such as hysteria, neurasthenia, epilepsy and insanity.

3. Bashford discusses heredity in cancer. He believes that there is only negative evidence that inherited constitutional conditions play any part in the development of this disease and that as yet no definite conclusions can be reached in regard to heredity and the transmission of cancer.

4. Latham, discussing the influence of heredity upon tuberculosis, believes that the hereditary transmission of the germ is so infrequent that it is a negligible factor, but that there is some evidence to suggest that the diminishing incidence and mortality of the disease may be in part due to a partial immunity inherited in the course of generations from tuberculous ancestors in whom the disease has been cured. He is firmly of the opinion, however, that the theory that there is an inherited predisposition to tuberculosis is based on insufficient evidence.

5. Hurry takes up the various vicious circles associated with disorders of the digestive system, first considering that condition often found in the mouth, in which oral sepsis leads to dental caries, while dental caries in its turn leads to increased oral sepsis, this going on to systemic disturbance, tending to lower the resistance locally and to encourage the continuance of infection and absorption. In the various vicious circles associated with the stomach, among others he considers that form of dilated stomach associated with gastroptosis often found in connection with general debility, anemia, neurasthenia. Here the poor general condition leads to weakness of the muscle walls and consequent dilatation, thus inducing various digestive disturbances and poor absorption of food, tending to increase the constitutional debility or weakness. He speaks of the various visceral disturbances found in connection with chronic valvular disease of the heart, which often form vicious circles of a severe and dangerous type. In the intestines various vicious circles are found in connection with such conditions, as volvulus and intussusception. In that condition known as mucous colitis there is usually a direct connection between the local colitis and the general neurasthenic condition. The relation of constipation and hemorrhoids, the one leading to the other, is another striking example of a vicious circle.

7. Watson goes over the work of the various investigators on the subject of pancreatitis. He believes that the Cammidge reaction in the urine is of great value in the differential diagnosis of this condition. Clinical cases of pancreatitis can be divided into two groups: those in which jaundice is a prominent symptom, and those in which it is absent. In an advanced case the clinical features may be merely those of severe or pernicious anemia. He gives various cases illustrating the different types of this condition. That disease known as catarrhal jaundice he believes is often really acute pancreatitis in which the bile ducts are blocked by pressure from an enlarged and swollen head of the pancreas. In the differential diagnosis he emphasizes several points. The pain of pancreatic disease is referred to the epigastrium and radiates to the left side. Emaciation, anemia and asthenia may be present in pancreatitis to an extent equal to that present in advanced malignant disease. Glycosuria is of some value in the differential diagnosis of pancreatitis from malignant disease, this symptom being more common in the inflammatory conditions of the gland. A negative pancreatic reaction in the urine points against the existence of pancreatitis. Pain on deep pressure over the region of the head of the pancreas in cases without jaundice, where the symptoms are those of indigestion, is often due to pancreatitis. He discusses the question of operation and does not believe that there is any definite rule to be laid down in these cases. [J. B. H.]

The Practitioner.

November, 1908.

1. Thompson, W. J. *Home Treatment and Nursing of Pulmonary Tuberculosis in Dublin.*
2. Tirard, N *Infective or Ulcerative Endocarditis.*
3. *Fenton, W. J. *Adherent Pericardium.*
4. Wakefield, A. W. *Account of the Theory and Employment of Bier's Method of Treatment by Passive Congestion in Cases of Rheumatoid Arthritis, Tubercle, Sepsis and Various Other Conditions.* (Continued.)
5. *Mackenzie, L. H. L. *Gastric Ulcer.*
6. Still, G. F. *Some Recent Work in Diseases of Children.*
7. Moore, F. C. *The Stomach; A Review of Some Recent Work.*
8. Williams, R. P. *Medical Inspection of School Children.*
9. Parnell, R., and Gompertz, R. *Case with Comments: Neoplasm of the Kidney presenting Certain Unusual Features.*

3. Fenton emphasizes the difficulty in distinguishing symptoms due to an adherent pericardium from those of chronic heart failure. He bases his article on an analysis of 170 cases in which this lesion was found post mortem. He distinguishes two forms: (1) in which there is close adhesion within and obliteration of the pericardial sac, but without any appreciable clinical or pathologic symptoms or results, and (2) where adhesion is accompanied by marked cardiac hypertrophy and dilatation, serious embarrassment of the circulation and early death of the patient. The etiology of this first form is very obscure. It is found in the second half of life, and much more frequently in men than in women. It is not necessarily associated with valvular disease either of the rheumatic or degenerative type, nor is a history of rheumatism often obtainable. From the occurrence of this condition without symptoms it is evident that adhesion within the pericardial sac is not necessarily of serious importance. The second variety occurs in the first three decades and usually causes an early death. A history of rheumatism is present in a great majority of cases under thirty years, combined with a valvular lesion. He discusses the cause of the cardiac enlarge-

ment. This is generally explained in one of three ways: (1) By obstruction to systole leading to cardiac hypertrophy, subsequent dilatation and fever. (2) That the effects are not due to the pericardial adhesion, but are wholly to be explained by the accompanying valvular incompetence. (3) By the degeneration of the cardiac muscle, occurring with the initial attack of pericarditis, and allowing the subsequent dilatation. He believes that the first two factors work jointly to cause the hypertrophy; that whereas the adhesions alone might not be enough to cause embarrassment, in conjunction with a damaged valve, hypertrophy and dilatation soon occur. As regards diagnosis, in addition to the symptoms of cardiac failure it is characteristic to find these symptoms altogether out of proportion to the signs observed upon physical examination, together with evidence of cardiac enlargement greater than the signs of valvular disease present will account for. Systolic recession of the intercostal spaces he does not think is important. Systolic recession of the apex beat probably does not really occur. Firmness of the pericardium is often present and marked. A fixed apex beat, although the patient lies in different positions, is an important sign, if unmistakably present. Diastolic collapse of the veins of the neck is of no value, and a diastolic shock is seldom felt. As regards prognosis, undoubtedly chronic adherent pericardium is the gravest cardiac lesion to which young people are liable. If, however, the patient is still alive at the end of thirty years, prognosis becomes very different and very much better. Where the cardiac enlargement is great the prognosis is usually much the worst.

5. Mackenzie, in an article on gastric ulcer, presents the latest views of the authorities who have recently written and investigated this subject as regards diagnosis, prognosis and treatment. He gives a good bibliography. [J. B. H.]

Edinburgh Medical Journal.
November, 1908.

1. Caird, F. M. *Some Points in the Evolution of Surgery in Edinburgh.*
2. Simpson, A. R. *Uterine Fibroids.*
3. Beatson, G. T. *Case of Rapidly Growing Fibro-Adenoma of Mamma.*
4. *Wilkie, D. P. D. *Vaccine Therapy in Tuberculous Disease with Mixed Infection.*
5. Don, A. *Congenital Diaphragmatic Hernia in an Old Man.*

4. Wilkie, in an article on vaccine therapy in tuberculous disease with mixed infection, presents numerous illustrative cases, concluding as follows: (1) That the healing of the wound after a radical operation for the removal of tuberculous disease with mixed infection depends (*a*) partly on the nature of the secondary organism, e. g., with staphylococcus albus much more favorable than with staphylococcus aureus or streptococcus; (*b*) partly on the opsonic index of the patient for the invading organism. (2) One can with advantage raise the patient's opsonic index for the invading organism previous to operation by cultivating the organism from the wound, making a "personal" vaccine and injecting this into the patient. (3) Operation must be delayed until the negative phase following the vaccine injection is over, and if possible one should operate during the positive phase. (With staphylococcus the negative phase is generally over in thirty-six hours.) (4) In cases where after operation sinuses have persisted, improvement in both general and local conditions follows treatment with a suitable vaccine. (5) The local action can be greatly enhanced by combining, where possible, the vaccine treatment with the application of passive congestion by an elastic bandage (Bier), or by use of suction cups (Klapp). (6) That in the great majority of localized infective lesions vaccine treatment may be carried out with little or no risk, and often with great advantage to the patient, without making regular opsonic examinations; that such examinations, unless made very frequently, are apt to be misleading, and that no one should be deterred from employing vaccine therapy because of the difficulty or impossibility of having such examinations made. [J. B. H.]

Deutsche Medizinische Wochenschrift. No. 45.
Nov. 5, 1908.

1. Lubarsch, O. *The Comparative Pathology of Tuberculosis.*
2. *Ballner, F., and v. Decastello, A. *The Clinical Value of the Complement-Binding Reaction in the Serodiagnosis of Syphilis.*
3. Diesing, E. *The Biologic Principle of the Light Treatment of Cancer.*
4. Rehberg, Th. *Defective Arterial Blood-Supply of the Brain and Upper Extremities in Aneurysm of the Aortic Arch.*
5. Richter, G. *A Case of Congenital Heart Disease.*
6. Gümbel, T. *Retrocecal Pocket and Retrocecal Hernia.*
7. *Henkel, M. *Prognosis and Treatment of Puerperal Infection.* (Conclusion.)
8. Bock, V. *Contribution to the Internal Treatment of Gall Stones.*
9. Harnack, E. *Caffeine-free Coffee.*

2. These authors mention the claims of Neisser and Wassermann in regard to the specificity of the complement-binding reaction in syphilitic sera. Then they mention several authors who have reported positive results in other diseases. In their own work they have used cattle instead of sheep's blood in preparing their hemolytic serum. Working with this they have obtained a positive reaction in diseases of the lungs and kidneys, carcinoma, cardiac disease and the leukemias. On testing these sera they found that they were positive without the addition of the organ extract (antigen), while syphilitic sera always need the presence of the antigen. These sera they called autotrope sera. This seemed to be peculiar to the cattle hemolytic sera in contrast to the sheep hemolytic sera, and thus by using this species of animal the test is still of practical importance in diagnosing syphilis.

7. In a long article extending through three numbers of this journal, Henkel first takes up the bacteriology of the female genital tract. Streptococci are quite apt to be present even in unexamined patients. The species that are the most dangerous are the ones that grow rapidly on culture media and cause hemolysis.

As regards prognosis, the time of starting of symptoms is not conclusive, as cases that first show fever after ten or twelve days terminate fatally. The blood, pulse, respiration and temperature are guides only in so far as they tell of the general condition. Rapid contraction of the uterus is a good sign, as it shuts off many of the vessels which form a good place for bacteria to grow. On the question of treatment he puts very little faith in antiseptics, but advises the hollow glass drain for the uterus through which passes gauze soaked in alcohol and quinine. The serum treatment for the infection he does not place much reliance in, but advises extirpation of the uterus in cases of puerperal sepsis and ligation of the thrombosed veins in cases of puerperal pyemia. The diagnosis between the two and also the determination of the best time for operation is often difficult to decide, but with experience it becomes quite definite. He then describes some of the different operations. [C. F., Jr.]

Münchener Medizinische Wochenschrift. No. 44.
Nov. 3, 1908.

1. v. Prowazek, S., and de Beaurepaire, M. *Investigations on Variola.*
2. Werner, R. *The Influence of Scarlet R. on Mouse-Tumors.*
3. Wandel, O. *Nervous Disturbances of the Upper Extremities in Arteriosclerosis. (Dyskinesia and Paresthesia Intermittens.)*
4. Bruck, A. W. *Orthostatic Albuminuria.*
5. Engel and Bauer. *The Significance and Specificity of the Complement-binding Antibodies in Tuberculosis and their Relation to Cure.*
6. Bittorf, A. *The Knowledge of Chronic Pneumothorax.*
7. Meyer, O. *Present Situation of Cirrhosis of the Liver.*
8. Ach, A. *Foreign Bodies in the Esophagus.*
9. Mohr, H. *The Treatment of Hypospadias Penoscrotalis in Adults.*

10. Dobisch, A. *The Etiology of Köhler's Disease of Bones.*
11. Boas, I. *The Clinical Story of Appendicitis.*
12. Denker. *Friedrich Bezold.*

No. 45. Nov. 10, 1908.

1. *Wolff-Eisner, A. *The Significance of the Conjunctival Reaction for Tuberculosis.*
2. Kauffmann, M. *The Pathology of Epilepsy.*
3. Ranke, O. *The Present Status of the Histo-Pathology of the Cerebral Cortex.*
4. Harrass, P. *The Prophylaxis of Pulmonary Tuberculosis.*
5. Moeller, A. *Internal Use of Tuberculin and Similar Preparations.*
6. Schönwerth, A. *Compound Skull-Fractures.*
7. Brüning, F. *The Radical Operation for Epigastric and Subumbilical Herniæ in the Linea Alba.*
8. Messmer. *A Method of Anesthetizing the Eye and its Adnexa.*
9. Tollens. *Kefir as an Infant Food for Chronic Digestive Disturbances.*
10. Schmidt, W. *A Peculiar Case of Cyst at the Root of a Tooth of the Upper Jaw.*
11. Weiss, K. E. *Full Correction of Nearsightedness in Childhood an Educational Necessity.*
12. Fischer, A. *German Sickness-Insurance, 1906.*

1. From 4,000 observations the writer derives the following conclusions: That the subcutaneous and cutaneous reactions are specific for tuberculosis, but are of limited clinical value, because they occur in latent tuberculosis; that the positive conjunctival reaction indicates active tuberculosis; that negative reactions in manifest tuberculosis are a bad prognostic sign, but with the exception of the cutaneous "duration reaction," positive reactions allow no favorable deductions; and that it is possible in certain tissues, e. g., connective tissue, to produce receptors which attract to themselves the tuberculin and thus localize the toxic effect. [G. C. S.]

Deutsche Zeitschrift für Chirurgie.
Bd. 92. Heft. 1–3.

1. Hagentorn, A. *Treatment of Gunshot Wounds of the Abdomen.*
2. Anhausen. *Osteogenesis Imperfecta, or Early Osteomalacia as an Etiologic Basis for Idiopathic Osteapsathyrosis.*
3. Creite, O. *Syphilitic Dactylitis.*
4. Haagn, T. *A Case of Thrombosis of the Superior Mesenteric Vein cured by Operation.*
5. Brandenstein. *The Treatment of Tetanus by Antitoxin.*
6. *Lossen, W. *Extracapsular Resection of the Tuberculous Elbow-Joint.*
7. *Franke. *The Anatomy of Madelung's Deformity of the Hand.*
8. Kunith. *A Case of Primary Actinomycosis of the Kidney.*
9. Kuhn, F., and Rössler, M. *The Treatment of Fresh Aseptic Catgut with Iodine or Silver.*
10. Wilms. *The Importance of Overcorrection in Fractures treated by Nailing.*

6. The results of 74 cases of extracapsular resection of the elbow for tuberculosis are given by Lossen. The aim of the operation is to remove all diseased tissue by cutting at least 1 cm. outside the abscess wall. The diseased area, together with the ends of the bones, is thus removed *in toto*. Following this, a slot is cut in the end of the humerus, into which the ulna is fixed by a nail, which is allowed to project through the dressing so that it can be removed at will. Over the end of the radius is interposed a flap of muscle or fascia to prevent union and preserve rotation. The arm is put up in plaster of Paris without drainage. At the end of two weeks the nail is removed and in a month the plaster is changed. As soon as there is moderately firm union at the ends of the bones, active and passive flexion and pronation is started, together with massage and electricity. A useful joint is acquired in about three months. The immediate results showed 73% healed without fistula, and 16% healed with only a small one. In 37% there resulted a good functionating joint; in 46% ankylosis in good position occurred, while in 7% there was a flail joint. The article is well illustrated.

7. Franke's investigations lead him to the conclusion that the so-called Madelung deformity of the hand is caused by a lack of correct growth of the radial epiphysis. [W. C. Q.]

Bd. 92. Heft. 4–6.

1. *Heller, E. *The Method of Resection of the Lower Jaw.*
2. Klemm, P. *The Plastic Treatment by Flaps of the Contractures following Burns of the Hands and Fingers.*
3. *Lennander, K. G. *Temporary Gastrostomy for Ulcer of the Stomach or Duodenum.*
4. Matsuoka, M. *Stiff Spine.*
5. Bircher, E. *The Surgery of Non-Parasitic Cysts of the Spleen.*
6. Ito, H., and Soyesima, Y. *Resection of the Stomach by the Second Method of Billroth.*
7. Fromme, A. *A Case of Retroperitoneal Incarcerated Hernia.*
8. *Damianios, N. *Intestinal Resection for Gangrenous Intussusception in the Child.*
9. Linkenheld, F. *Strangulated Hernia of the Appendices Epiploicae.*
10. Haim, E. *Appendicitis in Old Age.*
11. Dreesmann. *The Congenital Anomalies of the Gall Passages.*
12. Ehrlich. *Isolated Fractures of the Transverse Processes of the Lumbar Vertebrae.*
13. Richarz, A. *Subtarsal Backward Dislocation of the Foot.*
14. *Schwarz. *The Treatment of External Anthrax in the Human Being.*
15. *v. Oppel, W. A. *The Entrance of Air into the Internal Jugular Vein during Operation.*
16. Ellerbroek, N. *Backward Dislocation of the Shoulder.*
17. Milner, R. *The Occurrence of Hemorrhage in the Head from Backward Stasis. (Traumatic Asphyxia.)*
18. *Hotz, G. *A Contribution to Suture of the Lung.*
19. Dumont, F. L. *A New Method of Osteoplastic Amputation of the Thigh.*
20. Budinger, K. *Traumatic Tear of the Cartilage in the Knee-Joint.*
21. Hoffmann, A. *The Treatment of Fractures of the Cervical Vertebræ.*
22. Kruger. *The Removal of the Appendix in Operations for Hernia.*
23. Iselin, H. *The Wenzel-Gruber Epiphysis of the Tuberosity of the Fifth Metatarsal Bone.*
24. Matsuoka, M. *Radium Burns of the Skin.*
25. Subbotitch, V. *Dislocations through the Lisfranc Joint.*
26. Blech, G. M. *Nicholas Senn. Necrology.*
27. Sick, P. *An Adjustable Support for Operations on the Gall Bladder and Kidney.*

1. In an excellent article on resection of the lower jaw, Heller calls attention to the following points: Closure of the mucous membrane after removal of the jaw should always be made, regardless of whether a prosthesis is to be worn or not. This prevents secondary infection and subsequent contraction of the floor of the mouth by scars. Fixation of the tongue by catgut stitches should be done as soon as the genioglossus muscle is severed. It is important to cut the internal pterygoid so that secondary inward dislocation of the remaining stump may not occur. If the resection must include the angle of the jaw, thus depriving the masseter of its insertion, it will usually be found best to remove the entire half and substitute a prosthesis which enters the glenoid fossa.

3. Lennander advises a temporary gastrostomy, (1) in all cases of acute dilatation of the stomach which are not quickly cured by stomach washing; (2) in cases of paralysis of the small intestine in which the upper part of the gut is involved; (3) as a substitute for gastrojejunostomy in perforation of an ulcer of the stomach or duodenum, coexistent with a pyloric stenosis, when the condition of the patient or the extent of the peritonitis make the longer operation impossible; (4) when it is impossible to close a perforation in a satisfactory manner;

(5) in operations where one is led to fear a second perforation from another ulcer; (6) at operations for perforation where the extent of the peritonitis makes a paralysis of the intestine probable; (7) in conjunction with a jejunostomy for chronic ulcer with stenosis in cases where the condition of the patient will not warrant a gastrojejunostomy.

8. Damianos advises the resection of an intussusception with subsequent fixation of the ends of the gut into the wound. Three cases are reported. In some cases the diagnosis may be very obscure. The palpation of a tumor is not always possible, and the bloody stools may also accompany a simple enteritis.

14. Schwarz advises strongly against operation for anthrax pustule. When the infection is but a day or two old the bacilli are already in the neighboring glands and later reach the spleen, bone-marrow and liver. The area of local infection does not act as a source for new absorption because the bacilli here are either destroyed or absent. Therefore, excision or the use of the cautery are to be condemned. Twelve cases are reported in which recovery took place under general supporting treatment, with rest in bed and mercurial ointment applied locally.

15. Air is most apt to enter the veins during operations on the neck in which the tumor or inflammatory tissue prevents the veins from collapsing. In all such cases a preliminary ligation of the jugular vein should be performed. When air has entered it may possibly be of some benefit to withdraw it by suction through a catheter passed down the vein to the right auricle.

18. Hotz advises immediate operative treatment of penetrating wounds of the lung even though the condition of the patient be very critical. Free opening of the thorax followed by drawing up of the lung and fixing it into the wound by suture will relieve the impeded circulation. If the pulmonary parenchyma has been much injured a pneumonia with subsequent empyema may develop, but in the meantime the patient has had opportunity to gain strength. Immediate closure of the wound, instead of drawing up the lung, is to be condemned, because empyema is much more apt to intervene in the presence of a collapsed lung; and if later one is obliged to operate in the presence of a hemopneumothorax, the outlook for a successful result is much imperiled.

[W. C. Q.]

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Correspondence.

TRUTH-TELLING BY PHYSICIANS.

Springfield, Mass., Dec. 11, 1908.

Mr. Editor: In these days when ultra-frankness of speech on the part of the physician advising his patient has become a popular cult, we may well pause and consider some of the effects of such conduct on the patient and his relatives.

It may seem superfluous to state that the physician's life work is to care for sick people, and that all the contributory branches of medicine have the same goal. Holy science and elusive truth must be wooed early and late, but not to the detriment or disregard of the person afflicted by disease. Speculation as to the future in any individual case, or prognosis, should be handled with great circumspection, especially by the younger members of the profession. Infallibility is not an attribute of the practising physician, and the truth is very often, "I don't know."

Two queries arise in the mind of the conscientious physician about to inform his patient as to diagnosis and prognosis. First, Is my finding the exact truth? Second, Is the patient's best interest served by imparting to him my knowledge?

A concrete example has been furnished lately by the case of a large man, some forty years of age, who was the victim of gradually extending paralysis of the extremities due to syphilis of the nervous system. He had reached a condition of almost absolute helplessness, sitting and lying day and night in one chair. After his physician, a man in good standing in the profession, had made his examination, he informed the wife that her husband had gummata at the base of the brain and could not possibly live more than two years and a half. Two years, three years passed, and the patient was in the same condition. Meanwhile the wife had labored beyond her strength and had impaired her health in the attempt to make her husband's last days comfortable, for the family had slender means and there were two children to support.

The next physician, a man of large practice, told the wife that she need not be surprised at any time to find her husband dead. Still he did not die but, on the contrary, improved a little. After six years he was seen by a young neurologist, not long out of the school. He made the same diagnosis, gummata of the brain, and in addition told the wife that it was useless to do anything for the patient because the nerve trunks were degenerated and could not be restored to function. So he went on his way, having uttered the truth as he saw it. Absolutely no assistance, no hope, given to the hard-working, devoted wife to meet and carry on her arduous and omnipresent duties, — the care of a helpless invalid from day to day with no assistance from a bank account. The wife states that the regular physicians were every one wrong in their prognoses. At this stage comes the osteopath with a hopeful spirit, skillful massage and plausible explanations. After his ministrations, and at the end of the eighth year, the patient can walk a little, his general health is perfect and he is much less of a burden to himself and to his family.

Another example. A well-known physician, an ardent advocate of truth-telling and frankness, was called to see a patient of a brother practitioner during the latter's absence from town. The patient was an old man, suffering with enlarged prostate and kidney and heart disease. Under treatment he was leading a useful life and one of some enjoyment to himself. The truth-teller makes a complete physical examination, for which he is well fitted, finds the heart and kidney disease, and tells the truth to the patient, with the result that the poor man is frightened, criticises his family physician for concealing the truth, loses his courage and goes down hill rapidly.

How many human beings are benefited by a full knowledge of their physical condition? A few rare souls can know and face the music. Fortunately not many patients having advanced cancer ask for a diagnosis. Why should the physician take away what hope they have? Small wonder that mental healing and Christian Science, with their shadowy diagnoses and hopeful and helpful outlook flourish in the community. Truly, the truth-teller is the *enfant terrible* of medicine, and wide is the trail of havoc he leaves behind him.

May we not, to-day, subscribe to the words of Oliver Wendell Holmes, published over fifty years ago in this Journal?[1] "I think the physician may, in extreme cases, deal with truth as he does with food, — for the sake of his patient's welfare or existence. He may partly or wholly withhold it, or, under certain circumstances, medicate it with the deadly poison of honest fraud."

Veritas.

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GOOD LORD DELIVER ME.

Boston, Dec. 15, 1908.

Mr. Editor: Fielding Ould was a well-known "man-midwife" in Dublin. In 1760 Trinity College decided to admit him to the degree of M.D., the first ever conferred upon an obstetrician. Ould became the second master of the Rotunda Hospital, which had been founded in 1757 by one Bartholomew Moss.

Dr. Ould was also the first obstetrician in Ireland to be knighted, and upon this occasion the following choice epigram appeared:

" Sir Fielding Ould is made a knight,
He should have been made a lord by right,
For then each lady's prayer would be,
' O Lord, good Lord, deliver me.' "

Very truly yours,
Charles G. Cumston, M.D.

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[1] Valedictory address. Boston Med. and Surg. Jour., Mar. 25, 1858, vol. lviii, p. 149.

RECORD OF MORTALITY

For the Week ending Saturday, Dec. 5, 1908.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	6	1
Chicago	520	142	Waltham	7	1
Philadelphia . . .	524	122	Pittsfield	7	—
St. Louis	—	—	Gloucester	14	—
Baltimore	159	29	Brookline	6	1
Cleveland	—	—	North Adams . .	4	3
Buffalo	—	—	Chicopee	7	4
Pittsburg	—	—	Northampton . .	5	1
Cincinnati	—	—	Medford	3	1
Milwaukee	—	—	Beverly	3	—
Washington . . .	—	—	Leominster . . .	10	4
Providence . . .	—	—	Hyde Park . . .	5	2
Boston	234	65	Melrose	3	2
Worcester	39	11	Newburyport . .	4	—
Fall River	27	9	Woburn	6	—
Cambridge	30	10	Westfield	8	3
Lowell	29	7	Marlboro	5	2
Lynn	21	4	Revere	2	—
New Bedford . .	24	7	Attleboro	3	1
Springfield	20	4	Peabody	—	—
Lawrence	29	8	Adams	2	—
Somerville	20	5	Clinton	5	1
Brockton	11	3	Gardner	2	1
Holyoke	20	5	Milford	4	—
Malden	9	—	Watertown . . .	2	0
Chelsea	—	—	Plymouth	—	—
Newton	6	—	Weymouth . . .	2	1
Salem	5	4	Framingham . .	3	—
Haverhill	9	1	Southbridge . . .	5	1
Fitchburg	11	2	Wakefield	—	—
Everett	6	3	Webster	—	—
Taunton	11	3	Arlington	1	—

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING DEC. 12, 1908.

D. N. Carpenter, surgeon. Ordered to the Naval Academy. Dec. 4.

R. A. Warner, passed assistant surgeon. Detached from the Naval Academy and ordered to duty at the Naval Hospital, Norfolk, Va. Dec. 4.

E. O. J. Eytinge, assistant surgeon. Detached from the "Ranger," when placed out of commission, and to duty at the Naval Hospital, New York, N. Y. Dec. 4.

A. J. Geiger, passed assistant surgeon. Detached from the Naval Station, Guam, M. I., and ordered to the "Supply." Dec. 5.

I. H. Casto, assistant surgeon. Detached from the "Supply" and ordered to continue duty at the Naval Station, Guam, M. I. Dec. 5.

G. E. Thomas, acting assistant surgeon. Appointed acting assistant surgeon from Dec. 3, 1908. Dec. 8.

F. M. Munson, passed assistant surgeon. Ordered to the "Monadnock" and "Monterey," when discharged from treatment at the Naval Hospital, Canacao, P. I. Dec. 10.

J. O. Downey, assistant surgeon. Detached from the "Relief" and ordered to "Charleston." Dec. 10.

APPOINTMENT.

Ernest Edward Tyzzer, M.D., has been appointed Assistant Professor of Pathology at the Harvard Medical School.

SOCIETY NOTICES.

American Physiological Society. The twenty-first annual meeting will be held Dec. 29–31, 1908, in the Physiological Building, second floor, of the Johns Hopkins Medical School (Washington and East Monument streets), Baltimore.

American Association for the Advancement of Science.—The annual meeting of the American Association for the Advancement of Science will be held in the buildings of the Johns Hopkins University, Dec. 28, 1908, to Jan. 2, 1909. All members of the affiliated societies *who are not also members of the A. A. A. S.* are earnestly requested to register their names at the desk provided for that purpose in the office of the Permanant Secretary, McCoy Hall corridor, Johns Hopkins University. Attention is called to the following events announced in advance: Address by the retiring president of the A. A. A. S., Monday evening, Dec. 29, at 8 p. m., in McCoy Hall, to be followed by a reception to the Association by President Ira Remsen and the Board of Trustees of the Johns Hopkins University. On Friday, Jan. 1, there will be held under the general auspices of the A. A. A. S. and the American Society of Naturalists a celebration of the one hundredth anniversary of the birth of Charles Darwin and the fiftieth anniversary of the publication of the first edition of the "Origin of Species." This celebration will consist of a morning and afternoon program of addresses by prominent naturalists, to be followed by a dinner at eight, at which further addresses will be made.

RECENT DEATHS.

Dr. Bethuel Lewis Dodd, one of the oldest physicians of New Jersey, died at the residence of his son, Dr. Edwin L. Dodd, in Newark, on Dec. 6, aged eighty-two years. He was born in East Orange, N. J., and had been practising since 1852.

Dr. Frank Russell Baker, of Brooklyn, N. Y., was instantly killed on Dec. 11 by a fall from a window on the fourth story of his residence from which he was removing a tightly wedged screen. Dr. Baker was graduated from the College of Physicians and Surgeons in 1889, and devoted his attention more particularly to diseases of the nose and throat. He was thirty-nine years of age and the son of the late Dr. George Washington Baker, a prominent Brooklyn practitioner, with whom he was associated until the death of the latter, about ten years ago.

Dr. Gillis Stark, of Manchester, N. H., died of apoplexy Dec. 13, at the early age of forty-three years. Dr. Stark was a great-great-grandson of General John Stark. He was graduated at the Dartmouth Medical College in 1889, and while there was prominent as a football player. In addition to his practice, Dr. Stark served in various political positions with much public spirit.

BOOKS AND PAMPHLETS RECEIVED.

Nervous and Mental Disease Monograph Series. No. 2. Studies in Paranoia. By N. Gierlich, M.D., and M. Friedman, M.D. Translated and edited by Smith Ely Jelliffe, M.D. New York: The Journal of Nervous and Mental Disease Publishing Co. 1908.

The Medical Record Visiting List or Physicians' Diary for 1909. New Revised Edition. New York: William Wood & Co.

University of California Publications in Physiology. On the Synthesis of Paranuclein through the Agency of Pepsin and the Chemical Mechanics of the Hydrolysis and Synthesis of Proteins through the Agency of Enzymes. (Preliminary Communication.) By T. Brailsford Robertson.

Psychotherapy. Its Scope and Limitations. By Charles K. Mills, M.D. Reprint.

Report of the Commissioner of Education for the Year ending June 30, 1907. Vol. I. Washington. 1908.

Cataract Extraction. By H. Herbert, F.R.C.S. Illustrated. New York: William Wood & Co. 1908.

Thirty-ninth Annual Report of the State Board of Health of Massachusetts. Boston. 1908.

Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Authors and Subjects. Second Series. Vol. XIII. Washington. 1908.

Transactions of the Tenth Annual Meeting of the American Protologic Society held at Chicago, Ill., June 1 and 2, 1908.

Transactions of the American Otological Society. Forty-first Annual Meeting, Atlantic City, N. J., June 23 and 24, 1908. Vol. XI, Part 1.

Transactions of the Maine Medical Association, 1908. Vol. XVI, Part 2.

The Battle of the Microbes. Nature's Fight for Pure Water. The Merchants' Association of New York. December, 1908.

Proceedings of the Royal Society of Medicine. Vol. II, No. 1. London. 1908.

Progressive Medicine. Edited by Hobart Amory Hare, M.D., assisted by H. R. M. Landis, M.D. Philadelphia and New York: Lea & Febiger. Dec. 1, 1908.

A Synopsis of Surgery. By Ernest W. Hey Groves, M.S., M.D., B.Sc. (Lond.), F.R.C.S. (Eng.) New York: William Wood & Co. 1908.

Operative Treatment of Internal Hemorrhoids; Including a Consideration of the After Treatment as well as the Sequelae which Occasionally Ensue. By Lewis H. Adler, Jr., M.D. Reprint.

Rectal Diseases: A Report of Three Cases: Condyloma, Lipoma, and Foreign Body. By Lewis H. Adler, Jr., M.D. Reprint.

Original Articles.

TUBERCULOSIS OF THE LARYNX.*

BY ALBERT C. GETCHELL, M.D., WORCESTER, MASS.

It would be bringing coals to Newcastle to present before this society a paper on "Tuberculosis of the Larynx" gathered from the books or current literature. My only hope that I may interest you is that my paper is in a way a personal one. During the last ten years, as consulting laryngologist to the State Sanatorium at Rutland, and as examiner for that institution for the Worcester district, I have had a considerable opportunity to study the disease. Also I have seen many tubercular persons, who have been under treatment at the tuberculosis clinic at the Worcester City Hospital and in private practice. What I have to say is based largely on that experience.

No adequate and satisfactory conception of the disease can be had, particularly in relation to prognosis and treatment, until we know what are the avenues of infection. This is a pathological question, which the pathologists have not yet answered. In want of better evidence a clinician is entitled to an opinion drawn from clinical experience. It is my opinion that the larynx is infected through the blood vessels or lymphatics, and not from bacilli deposited upon the mucous membrane. The views set forth in this paper are based upon this idea.

Laryngeal tuberculosis, as a rule, is a late manifestation of the disease previously and coincidently existing in the lungs. It has been said to exist independently of pulmonary disease. I have never seen such a case and doubt its possibility. When we consider how difficult it may be to make a diagnosis of pulmonary trouble, while in the larynx it can be seen, we understand why such cases may be reported.

Generally tuberculosis of the larynx develops after the lung disease is well marked. But I recall three patients who presented themselves first for laryngeal symptoms. Of these one may be taken as a type.

This patient, a man of twenty-four years of age, came for sore throat, with no special history or signs of pulmonary disease. He had extensive grayish edematous infiltration of the larynx and epiglottis. The disease extended with great rapidity over almost the entire pharynx, and he died not many weeks after he first came under observation. Almost up to the time he applied for treatment he had kept at his work of motorman on the electric railroad, and a few months before he came he was married, at that time evidently not feeling that he was a sick man. He had pulmonary disease, and bacilli were present in the sputum.

The diagnosis of laryngeal tuberculosis can be made only by direct inspection of the larynx. But certain symptoms indicate the disease. The two symptoms which particularly denote laryngeal involvement are hoarseness and pain, but these are not constant nor definite. For instance, hoarseness may appear as an early sign of phthisis, although there is no involvement of the larynx. The debility associated with the onset of the disease is such that the larynx fails to properly act. One can see the cords approximate, but they fail to meet and remain a little apart during phonation. This condition corrects itself with returning strength. Again, tracheal catarrh, to which tubercular persons are prone, will cause hoarseness or even aphonia, with no involvement of the larynx. Ordinary catarrhal laryngitis in a tubercular person, of course, will cause hoarseness, as it will in non-tubercular persons. On the other hand, while tubercular involvement of the larynx will and usually does cause hoarseness, it does not necessarily do so.

I remember a woman who was about to be discharged from the Rutland Sanatorium as an arrested case. She had no symptoms referable to the throat, but a casual examination showed a distinct lesion of the larynx tubercular in nature. Since beginning this paper I have seen at the sanatorium also a man with marked infiltration of the arytenoids and epiglottis, but with a clear voice.

Pain, in my experience, is a prominent symptom only in those cases of marked involvement of the posterior part of the larynx, the classical, pyriform swellings of the arytenoids with ulceration and in tubercular infiltration of the epiglottis without ulceration, but to a much greater extent with ulceration. Moderate and transitory pain, however, may be associated with movements of a diseased larynx, like swallowing.

Passing now to the evidence obtained from direct inspection of the larynx, let us consider first the question of the presence of tubercle in the larynx of one known to have pulmonary tuberculosis.

A word about the color of the larynx. I have never been able to attach to the pallor of the larynx the importance that the books assign to it as a precursor of tubercular invasion of the organ. Persons having tuberculosis have pale throats as they have pale skins, but advancing tubercular disease of the larynx is indicated, I should say, by redness and not by pallor. This redness is localized and not general. In fact, a general redness of the larynx involving both cords, with little or no swelling of them nor of the arytenoids and ventricular bands, is an indication of a non-specific and not a specific cause. For instance, such a larynx is sometimes found associated with atrophic disease of the nose. Also the larynx of a tubercular person, like that of a non-tubercular, is subject to catarrhal inflammation. A diagnosis should not be made upon this condition alone.

There are certain states of the larynx not definitely tubercular but which are so suggestive of tubercular processes existing somewhere in the body that they deserve consideration. Of these may be mentioned a general moistness of the entire larynx, the ventricular bands, cords and arytenoids, moisture even to the extent of mucus settling into the fossæ about the arytenoids. The larynx lacks tone and character and indicates a general debility from some cause.

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* Read at the meeting of the New England Otological and Laryngological Society, Nov. 20, 1908.

An alteration of the normal relation of ventricular bands and cords, to my mind, is a distinct indication of tuberculosis, not perhaps in the larynx, but in the lungs. In the normal larynx the cords are to the ventricular bands relatively broad; in phonation they occupy a large part of the field. But in the condition I refer to, the ventricular bands nearly meet on phonation and the cords appear only as thin, narrow bands below them. The warty granulomatous growths that one sees not infrequently in the posterior commissure are significant also of tuberculosis. These vary very much in size; they may be so small as only to be a slight fringing, which is thrown up into folds as the arytenoids are brought together in phonation; they may be distinct tumors, usually conical in shape, or they may grow to greater size and fill the whole space, causing complete aphonia. I have seen a large number of them, but can recall but one instance in which they caused any special trouble.

We may pass now to conditions of the larynx that are distinctly tubercular. In general, a thickening of a part of the larynx, be it a ventricular band, cord or arytenoid, occurring in a person having pulmonary tuberculosis, is to be taken as a mark of the invasion of tubercle into the larynx. If there appear local changes of color, these must be watched with great care. This change of color will be easiest noticed upon a cord. The redness of one cord, while the other remains white, is pathognomonic of tubercular invasion. If, in addition to this redness, the cord be thickened, especially if it be of irregular outline, and still more if there be loss of continuity of surface ulceration, the lesion is tubercular beyond a doubt. The swelling of an arytenoid, whether the swelling be red or gray, also means tubercular infiltration.

It is evident that a more marked extension of these appearances, whether of infiltration or ulceration or both, means the same thing. So, also, a thickening of the tip of the epiglottis occurring in a person having pulmonary tuberculosis means tuberculosis there, the condition being more serious if ulceration is present. It should be borne in mind, however, that ulceration may appear upon the epiglottis of a person having pulmonary tuberculosis which is not tubercular. I have seen such a simple ulceration which promptly and fully healed. One would differentiate this from tubercular ulceration by the superficial character of the sore and the absence of infiltration and thickening of the organ.

Time will not permit a discussion of the differential diagnosis between tuberculosis of the larynx and certain other diseases of that organ, particularly syphilis and cancer. A word, however, about syphilis. Tuberculosis and syphilis sometimes coexist in the same person. Their laryngeal manifestations are confusing and reliance upon laryngeal appearance alone may be misleading. The following is a case in point:

This patient was a young woman of good family, good character and pure life, unmarried, as I then thought. The larynx had all the appearances of tubercular disease. Other conditions pointed to the same conclusion, but I could make no diagnosis of pulmonary tuberculosis, either by physical examination or the detection of tubercle bacilli in the sputum. After several weeks of more or less unsatisfactory treatment, without her knowledge I gave her iodide of potash and mercury, which was followed by decided improvement. Then I asked her direct questions, and it appeared that, without the knowledge of her nearest friends, even her parents, she had been married to a man of irregular habits and undoubtedly syphilitic. Under treatment her throat got well, but she died not long after of syphilis of the nervous system.

Laryngeal disease occurring in a tuberculous person is probably tuberculous; in a syphilitic person is probably syphilitic. Each may have its well-marked distinctive features. But the lesions of either disease may be such that they cannot be distinguished from the other except by the undoubted evidence of physical examination of the lungs, the detection of tubercle bacilli in the sputum or the application of the therapeutic test. And one might add the evidence of the tuberculin reaction.

Tuberculosis of the larynx is a very serious complication of tubercular disease and the prognosis is always grave. But the outlook is not so hopeless as we used to think that it was. Its arrest and cure depend upon the same principles that the arrest and cure of pulmonary and other forms of tuberculosis do. Its progress will sometimes vary with the general progress of the patient. It has been not an uncommon experience with me, seeing a patient month after month, to find the laryngeal condition getting better or worse along with the general condition.

When a lesion, however slight, appears in a patient who has advanced disease of the lungs or less advanced disease that is progressive, the situation is very grave. On the other hand, a considerable lesion, especially of the cords, in a patient who is making headway against his disease, need not cause immediate anxiety and a cure may result.

If I were to attempt a classification as to prognosis, I would say lesions of the cords or ventricular bands hold out more hope than those of the arytenoids and epiglottis. Marked involvement of the arytenoids, with grayish infiltration, with or without ulceration, I have never seen heal, and almost always it is a precursor of near death. If this involvement is associated with involvement also of the epiglottis the fatal end is hastened.

Treatment. — In a recent discussion this statement was made: "There are two well-defined classes of tuberculosis of the larynx — the hopeful and the hopeless. One should keep his hands off in the latter cases." In my opinion that is just what one should not do. That is what we used to do in pulmonary tuberculosis — we kept our hands off the hopeless cases. But since we have kept our hands on all cases, we have found to our great surprise that many of the hopeless ones have become hopeful. And we have also found it our duty and privilege to keep our hands on the hopeless ones, to ease them if no more on their downward road. The same is true of laryngeal tuberculosis. A strict following out of the whole treatment will give us results we have not been accustomed to expect. But if the fight is going against us, we must stand by, for death from the laryngeal complication is distressing in the extreme and the sufferer should have what help we can give.

But I suppose that the speaker meant that the laryngologist should keep his hands off, and with that I fully agree. Independent laryngological interference with tubercular larynxes has done much harm. But judicious laryngological interference, subordinate to the requirements of the phthisotherapist, has done and may do much good.

The treatment of the tubercular larynx is primarily the treatment of the patient and secondarily the treatment of the larynx. It is not necessary nowadays to speak in detail of the treatment of tuberculosis. Tubercular involvement of the larynx is a part of a more or less general tuberculosis, usually, however, limited to the lungs. The same measures that will cure the pulmonary lesion will cure the laryngeal. Aside from the elements of fresh air, good food and judicious medical supervision, I would emphasize rest in the local treatment of laryngeal tuberculosis. Talking and coughing are the two activities that keep the larynx in motion and, therefore, are to be considered primarily in treatment. The most remarkable result I have ever seen in treatment of tubercular laryngitis has come from rest alone.

The patient was a woman forty years of age, with advanced pulmonary disease, cavity formation at the right apex. She had been at the State Sanatorium, was in comfortable financial circumstances and lived in a good locality. She was intelligent and faithful in her treatment. April 27, 1907, she came under my observation. There was general hyperemia of the larynx and tracheal catarrh. Nov. 17 of the same year I noticed ulcerations on the ventricular bands. Complete silence was enjoined, which she faithfully carried out. There was no other local treatment. By spring the ulcers had disappeared and have not returned.

Cough is not necessarily an accompaniment of laryngitis, tubercular or simple. Indeed, I am inclined to think it is seldom a symptom of laryngitis alone, but rather of tracheal inflammation and diseased conditions lower down. If, however, it persists when there is tubercular disease in the larynx, it must be controlled by rest, open air, soothing inhalations, suggestion, but if by no other means, by opium if necessary. Tracheal catarrh is a not infrequent cause of cough in tubercular persons. An excellent treatment for this is intratracheal injections of guaiacol and menthol in olive oil: guaiacol, gr. 20; menthol, gr. 40; olive oil, ʒi. In addition to these general measures more definite ones may be employed, according to the state of the disease. For purposes of treatment this classification may be used:

1. Moderate involvement of the larynx with active inflammation, either with or without ulceration, the pulmonary lesions being active, with constitutional symptoms such as fever, etc.
2. More localized areas of disease in the larynx, either of infiltration or ulceration, without active inflammation of the surrounding tissues, the pulmonary lesion being inactive and there being no marked constitutional symptoms.
3. Marked and extensive involvement of the larynx, either with or without ulceration, particularly involvement of the arytenoids with gray infiltration, and of the epiglottis, either with or without active pulmonary disease.

Cases of the first class need, primarily, treatment of the patient and, secondarily, treatment of the larynx. They should be placed under the best hygienic conditions, if possible in a sanatorium, where they will have constant medical supervision. Complete silence should be enjoined and cough controlled. If they are strong enough, the larynx may be treated several times daily with antiseptic cleansing sprays, like Dobell's solution, which may be followed by soothing sprays or inhalations, such as menthol and guaiacol in a bland oil. As the acute inflammation subsides, astringent and antiseptic sprays should be added to the treatment or these agents may be applied with a brush. For the ulcerations, in cases of this type, I am more inclined to the use of a powder than lactic acid. Nothing is better than iodoform.

Cases of the second class need more active treatment. If there be catarrh, the cleansing spray should be used. For ulcerations, without doubt the best agent is lactic acid. The application of the acid should be preceded by sprays to wash as clean as possible the surface of the ulcers. If the physician has acquired sufficient skill, and the larynx is roomy enough to allow definite work, the ulcers may be curetted previous to the use of the lactic acid. For the destruction of localized areas of infiltration, the best and most reliable agent is the electric cautery.

Cases of the third class we cannot hope to cure, only to relieve. The pressing symptoms which call for relief are pain and difficulty of breathing. Here again Dobell's solution is of great use, dissolving and removing the sticky mucus. For the pain, orthoform may be used. I have never found it to be of much use in lozenge form, but I have found it of some use in powder form. Sooner or later cocaine or morphia must be used, in order that the patient may not only be relieved of pain, but that he may take food. For this purpose I have found a powder composed of paraformaldehyde, orthoform, cocaine and morphia of great value.

Paraformaldehyde,	ʒi
Orthoform,	ʒi

Compound stearate of zinc,	gr. 48
Cocaine,	gr. 10
Morphia,	gr. 10

This powder may be given to the patient, who can apply it himself with one of the excellent powder blowers at our disposal.

I have never seen a case where I thought good would follow the removal surgically of the swollen arytenoid, but if the disease of the epiglottis is fairly limited to its tip much may be accomplished by removing so much of the organ as is diseased. I have done this operation with marked benefit to the patient and no bad after-effects. The operation may be done with a cold snare or better, with a specially designed punch forceps.

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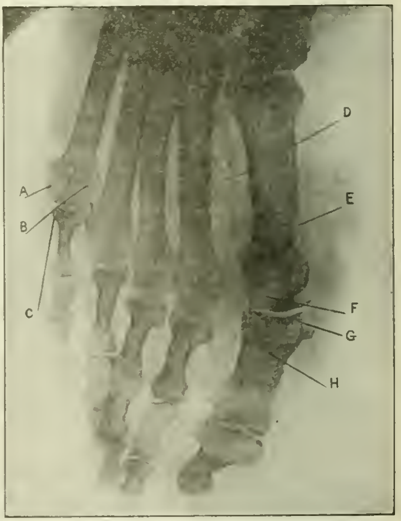
REPORT OF A CASE OF CHRONIC GOUT, WITH OBSERVATIONS ON GOUT IN GENERAL.*

BY DANIEL E. KEEFE, M.D.,
Visiting Physician to the Mercy Hospital, Springfield, Mass.

On Dec. 2, 1907, I was summoned to see a patient whom I sent to the Mercy Hospital. He gave the following history: German, fifty-four years old, by trade a coppersmith, married; both father and mother died at forty-two, the former after an illness of two years; has no knowledge of cause of death of either parent. One brother died at forty-nine, cause not known; two sisters living, in good health. Patient has had rubeola, epidemic parotitis and attacks of what he calls rheumatism. Has had la grippe and tonsillitis, and thirty-five years ago gonorrhea, and ten years later (twenty-five years ago) right hand was caught in pulley and injured. Denies specific history. Always drank beer freely, as well as champagne, wine and, occasionally, whiskey, but rarely tea or coffee. Always smoked cigars, liberally, and has been, in general, a good liver. Complexion pale and sallow, of a nervo-bilious temperament in contradistinction of the rule of sanguine temperament and florid plethoric habit being more common in gouty patients. His eyes are dark and prominent, and he is in a fairly good state of nutrition. He dates his present illness twelve years back; it began at night on his return from a dance, as is so commonly the case, first appearing in the metatarso-phalangeal articulation of the great toe of right foot. Onset sudden, pain sharp, burning and piercing in character; it continued for two weeks with, according to his best remembrance, a recurrence about every six months, but cannot say precisely, nor can he say exactly as to its duration. Ten years ago was treated for a similar attack, only the knees were affected; at least, it was there he experienced the most pain. Four years ago, while in Germany, was treated for another attack and says he was sick all over. Examination shows the metatarso-phalangeal joint of great toe of the left foot greatly swollen, somewhat resembling an inflamed and sloughing bunion; the tissues in the vicinity were edematous, the skin of a reddish or purplish hue, tense, shining, angry-looking and sensitive to touch or pressure. There was a necrotic area immediately over the outer aspect of the joint through which could be seen a grayish-white substance exactly resembling mortar.

The veins of the skin were distended and varicose in appearance, the proximal joint of the little toe was affected in like manner, only a proportionately larger area was involved and the sensitiveness was much greater. There was more or less discharge of pus, serum and a mortar-like material. On the proximal side of this inflamed area was a smaller one, over which fluctuation was well marked. To the inner side of, and below, the tuberosity of the left tibia there was a swelling larger than a bantam's egg. On the right foot, over the metatarso-phalangeal articulations of both great and little toes, appeared areas of discoloration and very small, almost healed sinuses, giving evidence of an old active process; even at this time a little whitish material can occasionally be squeezed out. In the mid metatarsal region, outer side, of this foot was a swelling about the size of an English walnut, and others of like size over the tendo Achilles and over the back of the right hand.

They all contained tophaceous matter.



A. Bone deprived of periosteum and absorbed. *B.* Same as above. *C.* Bone necrotic and denuded of periosteum. *D.* Interosseus artery occluded. *E.* Necrotic bone. *F.* Periosteum destroyed. *G.* Recent bone. Bone and periosteum absorbed. *H.* Bone infiltrated with uratic material.

EFFECTS OF URATIC DEPOSITS ON BONE AND CARTILAGE.

In a somewhat complete examination of the literature of gout from the writings of Hipprocrates, Celsus, Pliny, Galen, Boerhaave, Van Swieten, Sydenham, Trousseau, Rush and Watson, as well as all the more modern systematic writers, to say nothing of periodical literature, one is impressed by three things: First, the utter inadequacy of all the etiological causes for the deposition of uric acid; second, the method of its disposal. and third, its effect on bone and cartilage and especially the scant attention and little space devoted to the description and explanation of this phenomenon in bone, only two or three making any reference to its deposit on this tissue.

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* Read before the Eastern Hampden Medical Society, Sept. 11, 1908.

Cartilage is supposed to suffer most, being usually softened, eroded, injured, if not utterly destroyed.

The case here reported contradicts all this, for the cartilage was found normal and the bone almost entirely absorbed and replaced by uratic material, as will be shown as we proceed.

I believed that the long-continued pressure of the uratic masses over the proximal phalanges of the great and little toes had already, by interfering with their nutrition, caused necrosis of the bones as it had of the superjacent periosteum and cutaneous tissues. A skiagram Dr. Van Allen kindly took for me proved this belief well founded. The patient was placed under chloroform and both sides of the foot curetted, removing all the deposits and necrosed bone that was readily removable. The bones were so affected with deposit that the true bony tissue was almost entirely replaced by uratic deposit, and the bones were rendered so friable that, with thumb and finger, I chipped off a longitudinal piece, opening into the joint.

The cartilage covering the articular end of the proximal phalanx of the great toe was found *free from uratic deposit and healthy,* thus contradicting the oft-repeated dictum that it contains deposit and is frequently eroded and destroyed. In this case the periosteum was, next to the bone, the most affected; indeed, much of it utterly destroyed, as is shown in the skiagram. The patient was very reluctant in consenting to operation and objected to my removing the masses over the tibia, tendo Achillis and back of the hand. My curiosity, however, equaled his aversion. So, taking advantage of his condition, I plunged my scalpel into the large mass over the tibia and found that it contained mortar-like material. Two incisions were made longitudinally over the dorsum of the foot, revealing a white substance like plaster of Paris covering the entire muscle mass. Not a vestige of muscular tissue could be seen until the deposit was removed from a small area, showing the healthy muscular tissue underneath, only that grains of tophaceous matter were interspersed between the muscle fibers. The uratic material removed was kindly examined by Drs. Guild and Butler and Dr. John Maloney and pronounced urate of soda. Regarding the quantity of urate, Trousseau said: "Without accepting as verities the poetic and exaggerated statements to the effect that a certain Baylus and a certain Acragus were encased when alive in chalk, which they secreted in such frightful quantities that their tombs might have been constructed from the material they supplied," they do secrete from 100 to 300 gm., an amount that my patient at least equaled.

EFFECTS OF OPENING OR PUNCTURING TOPHACEOUS MASSES.

By making these openings on my own initiative, and contrary to patient's desire, I was technically guilty of a breach of trust and, in a sense, culpable. I am glad, however, to plead guilty, both on account of the benefit enuring to the patient and the satisfaction to myself. Furthermore, on some points he was childish and unreasonable, and his wife desired anything done that could be of utility. Like laparotomy in cases of tubercular peritonitis, we cannot tell beyond peradventure whether it be the admission of air or the manipulations that furnish the required stimulus. But we do know that frequently immediate benefit ensues. In this case the opening gave vent to the pent-up serum and the more liquid portion of the uratic deposit, while the admission of air set up an oxidation process, thus causing liquefaction and discharge ot the more solid portion. Be this as it may, a profuse discharge followed and the edema was lessened and improvement marked. The openings were dressed with simple water dressings, but with my present light I would have used carbonate of sodium or lithium dressings. There was a degree of arteriosclerosis present; the anterior tibial artery and many of the veins were nearly or quite occluded. The former shows in the skiagram.

I have before seen in a lithemic patient who was being operated for varicose veins an analogous condition: the lumen of veins was found to be completely occluded by calcareous matter and the operation was abandoned. During his seven weeks' stay in the hospital several abscesses were opened, and on many other occasions on the morning of intended operation the point of maximum fluctuation had disappeared and with it all indications for operation — absorption and drainage had accomplished all that could be desired.

CAUSE OF DEPOSITION OF URATES IN JOINTS AND OTHER TISSUES.

The causes usually given for precipitation are reduced alkalinity of the serum; changes in the Zanthin bases, absence of thymic acid, hypothetic ferment, autotoxemia, a trophoneurosis, etc.

If the precipitate is caused by any of these conditions, when the urate is intravascular, at blood heat and with little or no impediment to its free circulation, how does it happen that when extravascular and the circulation impeded by distended and occluded veins, to say nothing of arterial obstruction and the lowered temperature usually present in edematous limbs, nor that caused by the presence of the mortar-like substance and fluid filling the areolar tissue, that absorption can and does take place?

Verily the authors of these theories must be at fault, and they must give still more time and labor to the pursuit of experimental study of this subject.

THE KIDNEYS.

On first admission the urine was of high specific gravity, containing albumen and casts of all kinds, uric acid and urea present in excess. His urine was frequently voided, with pain, tenesmus and burning, with copious gravelly sediment, uric acid showers. The burning sensation in the urethra persisted through the intervals of urination.

After a time there was a material improvement in this condition, the bladder symptoms subsided and the urine became normal. He complained of headaches of all kinds, but especially migrainous headaches, neuralgic pains in different parts of the body, cramps in the limbs and most frequently in the calves. Had spells of great weakness, bordering on syncope or like those occurring in diabetes. Appetite poor, digestive troubles and flatulence common and sleep disturbed. Temper irritable, becoming emotional, crying or laughing on slight and apparently insufficient cause. During the greater part of the time, however, he was inclined to melancholy. Pulse and temperature, notwithstanding slight variations, remained practically normal.

At this point I may say that but few of all the writers consulted make any mention of opening into these tophaceous masses. They say, "If the danger to the vitality of the bone be urgent, they may be punctured, opened or referred to a surgeon," and all allude to the difficulty of healing wounds in gouty subjects. It is self evident that edematous limbs of these patients are in much the same condition as are those of chronic Bright's and ascites and varicose veins. The circulation is impeded, the temperature reduced, the vitality and nutrition lowered. The areolar tissues are filled with serum and uratic deposit, as has been before shown in this case. This must be got rid of before the nutrient material so essential to healing can circulate freely. Since the incisions and punctures, one or both, facilitate this removal, they tend to promote rather than retard the healing process and so a little time and position will cause healing without unreasonable delay. Such was the result in this case,[1] some of the openings tending to heal more rapidly than was desired. These chalky deposits are a cause of Dupuytren's contraction and have been found in nearly every tissue of the body, and Sydenham tells of a man who when playing at cards marked his score on the table with his chalky knuckles. They may be causes of aneurism, asthma and many apoplectic symptoms.

Treatment. — In the briefest space and fewest words, the treatment consists in the prophylactic and the curative. The former embraces those measures tending to neutralize the diathesis, if unfortunately we inherit such. These include an abstemious life, not permitting ourselves to fall victims to the luxury of the table or the allurements of the cup; eschew alcohol in all its forms; avoid game, dark meats and such as contain large quantities of purin and avoid exposure to cold and damp atmospheres; an occasional short course of alkalies and purgatives and active exercise out of doors. Curative treatment: This demands, for a time, liquid diet and a limited list of medicines, as thymic acid, as recommended by Schmoll, 20 cgm or 3 gr. three times daily; piperazin, 30 cm. or 5 gr. four times daily. Hypodermic morphin if necessary for excruciating pain and the following prescription will do very well:

	Ccm.
Sodii Phosphatis,	10.00
,, Salicylatis,	15.00
,, Bicarbonatis,	10.00
Cascarae Ex. fld.,	4.00
Tr. Card. Co.,	āā10.00
,, Colchici Sem.,	
Inf. Tritici ad.,	120.00

M S. Dessertspoonful four times daily.

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[1] The present condition of this patient is all that could be desired; he uses neither crutch nor cane and gets around quite briskly.

OBSERVATIONS ON EPILEPSY.

BY EVERETT FLOOD, M.D.,
Superintendent, Massachusetts Hospital for Epileptics.

(Concluded from No. 25, p. 823.)

I WOULD like to classify according to the mental or nervous condition, assuming the concomitant fit to be a distinct symptom-complex characterizing many diseased states. This does not now seem possible, but may become partly so in time.

Any of the neuroses or psychoses accompanied by epileptic seizures must be more serious than the same disease going through its course without such fits. This makes a difficulty in computing probability of recovery from epilepsy, and I see no way at present to make any further than a general statement, leaving the prognosis to be settled in each individual according to its merits. There can be no doubt that a large number of settled cases do get well. I have records of a good many and give four as an illustration:

G. C., twenty-seven, had fits since age of six. Has discovered a medicine. (No bromide.) Takes it night and morning; has had no fits for six months. One other case treated has also ceased the attacks.

G. H. D. had fits at age of twenty-three, hurt over heart, and in a month began to have fits; had G attacks of worst type for over ten years every other day or two; sometimes went nearly a month. At thirty-three began to take belladonna, six drops in the morning before breakfast and six drops of nux vomica before going to bed. He ceased to have fits in a week. Now none for sixteen years. Several others have done the same by his advice and have recovered.

C. W., now fifty years old, had severe fits while a student in college and for ten years afterwards; had to give up work, mind a little affected, would run risks on trains, etc. At age of thirty began using rectal injections at night, careful of diet, went to bed early, etc.; fits gradually ceased, mind improved. He has been well for twenty years and engaged in teaching, lecturing, etc.

B. B., now seventeen, had petit mal and occasional grand mal from age of three till age of fourteen; was stupid after attacks. Occasionally went a few weeks free from fits, but usually had them many times a day; mind sluggish. At age of thirteen, began taking medicine, composition unknown. Fits ceased in a month; none since for three years. She attends school, music lessons, is bright and seems normal.

The recovery rate at Gallipolis is a little more than 5%; at Sonyea, 5%. The percentage of recovery based on 1,172 cases admitted to the Massachusetts Hospital for Epileptics is .853%, the recovery being, males, 5 and females, 5. As a cause of epilepsy among the males, the habit of alcoholism was a predisposing cause in 3 cases, 1 from the father and 2 from patient himself;

as an exciting cause, 16. Among the females alcoholism in the father was a predisposing cause in 2 cases; alcoholism in the mother, 1 case; as an exciting cause, 2 cases. These figures are based on 1,172 cases taken from records of patients who have been admitted to the Massachusetts Hospital for Epileptics. To show the average number of fits in a given case, I cite 321 males and 279 females who have been here for the full year, the average number of fits per month for the males being 5.47 and the average number of fits for the females, 6.39.

As to blood pressure, a few observations are noted: About 1,400 observations in blood pressure have been made. The averages are given. In one patient 66 observations were made and the average pressure was 159.92; in another, 70 observations were made and the average pressure was 135.47; in another, 16 observations; average, 129.

As related to cabinet treatment, observations were made before the treatment, after, and forty-five minutes after. The results were in some of the 25 cases as follows: 194, 182, 200; 115, 155, 140; 190, 135, 130; 150, 168, 146.

As to posture, we have made 30 observations on as many different patients; first sitting, second standing, third recumbent with a large artery compressed (external iliac or abdominal aorta), fourth recumbent without such compression. The last six observations were made immediately after convulsions: 169, 170.5, 172, 170; 130, 132, 132.5. The following three are observations with and without a large artery compressed: 137, 125; 144, 136; 150, 138. In the following 3 out of 11 cases pressure was taken sitting, standing, lying and with large artery compressed: 140, 152.6, 155.8, 111.8; 146, 146.6, 149.4, 106; 143.2, 144, 144.6, 110.6.

As related to the occurrence of the convulsions, 34 observations are recorded in 12 different cases varying periods before the fit (from one hour to a few minutes), during the fit and from one-half hour to an hour after it, as follows: 145, 165, 135; 125, 140, 129; 130, 176, 135; 0, 200, 134; 140, 0; 130, 0, 146; 0, 0, 135; 0, 0, 138; 0, 0, 165; 0, 0, 148. There were two observations taken in lumbar puncture, one before and one after, showing a decrease from 140 mm. to 127 mm. Observations made in the year 1907 with Erlanger apparatus: 110 observations on male epileptics from twenty to twenty-five years old show an average pressure of 120 (systolic), 90 diastolic; highest systolic 125, lowest 110; highest diastolic 95, lowest 85. Twenty-five to thirty-five years old: average 125; highest systolic 150, lowest 110; highest diastolic 95, lowest 85. From thirty-five upward the average was 135 except in cases with arteriosclerosis and hypertrophy of the heart, when it varied as high as 150 (systolic), 100 (diastolic). For comparison 100 observations were made on healthy attendants, ages twenty to twenty-six: Systolic from 110–120; disastolic, 80–90. One case, weight 215 pounds, arteriosclerosis and hypertrophy, 215 systolic, 130 diastolic, pulse, 100. After brisk walk to farther end of ward and back 270 systolic, 140 diastolic, pulse 120. After rest of ten minutes, 220 systolic, 130 diastolic, pulse 96. Same results on several observations. Observations made before and after meals on 7 patients show an increase of 15 to 20 mm. in systolic pressure within an hour. Diastolic unchanged. Pressure drops in 3–4 hours after meals to same point as before. Patients who smoke after meals show somewhat higher rise than those who do not from 20 to 30 mm.

Observations on patients who have two to four convulsions earlier in the day show no appreciable change. On only one case was the observation made within a half hour of the convulsion. All observations taken by Erlanger graphic method, 12 cm. Janeway sleeve, recumbent position, between 2.30 and 4 P.M. Blood pressure observations were made by Spratling in 33 cases before convulsion, 95 to 175; after convulsion, 90 to 45. A slight decrease of pressure after the fit.

Number of persons who can help themselves. — The total number of patients in the hospital at the time of the observation was 436. Of these 120 can wash and dress themselves perfectly well; 61, passably well; 95 can dress with slight assistance; 160 need a good deal of assistance; 38 have spastic paralysis in either extremity, mild or severe; 6 have neither spastic weakness nor decided weakness of the limb, but are unable to use one or more limbs for fine work; 30 have weakness of either limb, upper or lower; 9 have incoordination.

The total number of cases of status at the Massachusetts Hospital for Epileptics among the females was 144, 24 of which were fatal. Among the males, 156 cases, 44 of which were fatal. This gives a total of 300 cases of status, of which 68 proved fatal. Hare quotes Bournville as regards status, but gives no statistics. Spratling says it may be displayed in the life of every epileptic and gives the rate of mortality as 14%. Gowers has seen no deaths from this. Turner quotes the rate of mortality as 10.7%, Binswanger as 50%, Prout and Clarke as 33%. Out of three cases of amnesia among the women, 1 was post-amnesia; 1, amnesic aphasia; 1, amnesia unknown. Six cases found among the men, 2 were post-amnesia; 2, complete amnesia and 2 amnesia not known.

The Massachusetts Hospital for Epileptics gives the mean age at death as 39, Spratling as 29.4; Snell, 33; London County Asylums, 40. Turner gives no statistics of his own and no statistics were found of Gowers.

The age at onset of epilepsy among the men was found to be as follows: 183 cases between the ages of one and five years; 69 between five and ten years; 136 between ten and fifteen; 63 between fifteen and twenty; 49 between twenty and twenty-five; 35 between twenty-five and thirty; 27 between thirty and thirty-five; 22 between thirty-five and forty; 16 between forty and forty-five; 16 between forty-five and fifty; 5 between fifty and fifty-five; 9 between fifty-five and sixty; 5 between sixty and sixty-five; none between sixty-five and seventy; 2 between seventy and seventy-five years. The age at onset in 9 cases was not known. Among the females, 144 cases between the ages of one and five years; 64 between the ages of five and ten; 143 between ten and fifteen; 36 between fifteen and twenty; 41 between twenty and twenty-five; 23 between twenty-five and thirty; 15 between thirty and thirty-five; 8 between thirty-five and forty; 13 between forty and forty-five; 8 between forty-five and fifty; 6 between fifty and fifty-five; 3 between fifty-five and sixty; none between sixty and sixty-five; 1 between sixty-five and seventy; 1 between seventy and seventy-five years of age. The age at onset in 17 cases was not known. Gowers says 27% began from age of thirteen to sixteen; Spratling, before puberty in 51%, after puberty in 38%, at or within six months of first period, 11%. Statistics by Turner show that 28% began from age of eleven to fifteen, 18% from sixteen to twenty years of age. Statistics by Hare not given.

Statistics taken from the records of 1,172 patients who have been admitted to the Massachusetts Hospital for Epileptics show the number of injuries, kind of injuries and injured region to be as follows. Among the males, head injuries: 16 cuts in the region of the scalp, 18 forehead, 1 upper jaw, 11 lower jaw, 2 dislocations of the lower jaw and six fractures. Injuries to the shoulder girdle: 5 fractures of the clavicle, 1 fracture of the scapula and 1 dislocation of the acromion clavicular joint. Injuries to the trunk: 1 fracture of the vertebræ. Injuries to the upper extremity: 3 cuts on hand and 3 on fingers, 1 burn on the arm, 2 on forearm, 3 on the hand, and 2 dislocations of the shoulder-joint, 3 fractures of the arm, 4 of forearm, 1 fracture of hand and 1 sprained finger. Injuries to lower extremity: 1 burn on thigh and 1 dislocation of the leg. Among the females, head injuries: 18 cuts in the region of the scapula, 14 forehead, 6 upper jaw, 10 lower jaw, 3 cuts on the ears, 2 burns on the upper jaw and 5 dislocations of the lower jaw. Injuries to the shoulder girdle: 3 fractures of the clavicle, 1 dislocation of the acromion clavicular joint. Injuries to the trunk: 1 burn on the chest. Injuries to the upper extremity: 1 cut on forearm and 1 on hand, 2 burns on arm, 8 on forearm, 2 on wrist, 14 on hand and 2 on fingers, 1 dislocation of finger and 1 of shoulder-joint, 1 fracture of arm and 1 of forearm, 2 sprains of the wrist and 1 of fingers. Lower extremity: 1 cut on leg, 2 burns on thigh and 1 on leg, 1 dislocation of the ankle-joint, 4 fractures of the thigh, 6 of the leg and 9 sprains of the ankle-joint.

Total number of injuries received by the males is 88 and for the females, 124.

The percentage of cases of epilepsy at the Massachusetts Hospital for Epileptics which were caused by head injuries is as follows: Number of patients admitted to the hospital, 845, number of males being 476 and females, 369. Of the total number admitted, 61, or 7.2%, have injury to the head given as a probable cause. Of the males admitted, 37, or 7.7%, have injury to the head given as a probable cause, and of the females, 24, or 6.5%, have injury to the head given as a probable cause. Examination of the records shows that there are 22 cases (14 men and 8 women) whose epilepsy was probably not caused by trauma. This leaves 39 cases (23 men and 16 women), or 4.6%, in which trauma may have been the cause. Of these 39 cases there are 9 men and 10 women in which the histories are deficient and it is impossible to say that trauma was the true cause. This leaves 20 cases, or 2.4% of all the cases admitted to the hospital, in which there is little doubt of the traumatic origin of the disease. Of the 20 cases which were probably caused by trauma, 14 were men and 6 were women. The percentage of probable cases of traumatic epilepsy among the men is 2.9% and among the women 1.6%.

In taking histories a point incidentally brought out though not based on anything more than an opinion of men of experience in general practice is that a very large number of children have at some time during early years one or more fits. The most of these do not recur. Many follow a fall from the high chair or some rather slight blow on the head. The child receives the blow, becomes unconscious for a moment, turns pale, grows rigid and returns to consciousness. This slight spasm sometimes returns on another occasion once or several times, but finally no trace is left and the parents forget the occurrence. Such an attack runs through the muscles after the manner of a convulsion in a kitten when a light tap on the head has been given. Some of these cases have hemiplegic symptoms for a few years, gradually increasing. These are sooner or later accompanied by convulsive attacks. In a few instances the convulsions have not come on though the patient is enfeebled mentally or bodily to a considerable degree. The interesting opinion about this phase of the subject is that out of a large number of little children who have a fit or a few fits a very small number become permanently epileptic. This does not apply especially to those of traumatic origin. It is common for parents to view the fits as an unimportant incident, expected in most children, and it is not often the cause of anxiety.

Per cent of traumatic cases as given by different authors is:

Gowers: 1,665 cases, 108 cases traumatic, or 6½%; males, 63; females, 45. Between ten and forty the male cases in each decennium were more than the females, twice the number; over forty the only cases in men. Spratling: in 509 women the cause was considered traumatic in 18 cases, 3½%; in 73 out of 88 cases occurring in both sexes the injury was received before the twentieth year. Boys under ten years, 31 cases; from ten to twenty years, 25 cases; over twenty years, 14 cases. Girls under ten years, 11 cases; ten to twenty years, 6 cases; over twenty years, 1 only. Barr: On page 214 of his work on mental defectives in 250 cases traumatism as a cause in 50, or 20%; in this table he evidently classes all sorts of injuries. At the Massachusetts Hospital for Epileptics the total number of cases investigated was 1,111. Of this number it was found that in 57 cases, or .051, the probable cause of epilepsy was blows or falls on the head either with or without fracture of the skull. In 9 cases fracture of the skull was diagnosticated, and 3 were operated on and pieces of bone removed. In this series the injury was received in 24 cases before the patients were ten years of age; between ten and twenty years in 21 cases; between twenty and forty in 7 cases; over forty in 5 cases. The fits began immediately after the injury in 6 cases; in from two to four weeks in 2 cases; one to two months in 6 cases; two to four months in 8 cases; four to six months in 7 cases; six to eight months in 6 cases; eight to ten months in 5 cases; ten to twelve months in 7 cases; one to two years in 6 cases; two to three years in 2 cases; three to four years in 1 case; four to five years in 1 case. There were 631 male cases; of this number 37, or .058, were probably caused by falls or blows on the head. In these 37 cases fracture of the skull was diagnosticated 8 times, and 3 of the 8 were operated on and some pieces of bone removed. In this series of 37 cases, in 11 the injury was received before the patients were ten years of age; 16 cases between ten and twenty years; 7 between twenty and forty, and 3 after forty. In regard to the time elapsing between the injury and the time of the first fit, it was found that in 3 cases the epilepsy began immediately; 2 cases in from two to four weeks; 5 cases, one to two months; 5 cases, two to four months; 4 cases, four to six months; 5 cases, six to eight months; 3 cases, eight to ten months; 5 cases, ten to twelve months; 2 cases, one to two years; 1 case, two to three years; 1 case, three to four years; 1 case, four to five years. In our series there were 480 female cases. Of this number 20 cases, or .041, were probably caused by head injuries. Of this number, in one case fracture was diagnosticated and was not operated on. In regard to the time of life at which the injury occurred, in the female cases it was found that in 13 cases the injury occurred before the tenth year; 5 between ten and twenty, and in 2 cases after forty. In these cases the fits began immediately in 3 cases; from one to two months in 1; two to four months in 2 cases; four to six months in 3; six to eight months, 1; eight to ten months, 2; eleven to twelve months, 2; one to two years, 4; two to three years, 2. In going over the records of these cases, the fact was noted that very few of them had hemiplegia and a great majority have typical grand mal seizures. We have record of 1 case between the ages of ten and twenty who received a fall on the head with fracture of the skull; 8 cases who received a fall on the head but without fracture of the skull before ten years of age and 11 cases between the ages of ten and twenty; 3 cases between twenty and forty; two cases over forty; total, 24. Classed as blow on the head with fracture of the skull contrasted with falls on the head of the previous paragraph: 2 cases between ten years of age, 2 between ten and twenty, 3 from twenty to forty, total of 7. Caused by blow on the head without fracture of the skull, 1 caused before ten years of age, 2 between ten and twenty, 1 from ten to forty and 1 after forty, total 5. Total as regards ages, 11 occurred before ten years of age; 16 between ten and twenty; 7 from ten to forty and 3 after forty; grand total, 37. The above is taken from a record of the male patients. Among the females the records show no case caused by fall on the head with fracture of the skull. Of falls on the head without fracture of the skull, 11 cases at ten years of age, 5 cases between ten and twenty years of age, 1 from twenty to forty, 2 after forty; total, 19. Of blows on the head with fracture of the skull, only one case which was under ten years. Of blows on the head without fracture, 1 case, which was also under ten years of age. Total cases under ten years of age, 13; between ten and twenty, 5; twenty to forty, 1; after forty, 2 cases; grand total, 21. Including both male and female cases, 24 were under the age of ten, 21 from ten to twenty, 7 from twenty to forty and 5 after forty years. Grand total, 57. As to the length of time between injury and first fit among the males who had received fracture of the skull, 1 case occurred within eight to ten months; 1 case of fall on the head without fracture of the skull; 3 cases began immediately; 1 in two to four weeks; 5 in one to two months; 3 in two to four months; 2 in four to six months, 3 in six to eight months; 1 in eight to ten months; 3 in ten to twelve months; 1 in two to three years; 1 in three to four years; 1 in four to five years. Of blows on the head with fracture of the skull, 2 cases began in two to four months after the injury; 2 in four to six months; 1 in six to eight months; 1 in ten to twelve months and 1 in one to two years; total, 7. Of blows on the head without fracture of the skull, 1 case began in two to four weeks; 1 in six to eight months; 1 in eight to ten months; 1 in ten to twelve months; 1 in in one to two years; total, 5. Total number of cases beginning immediately, 3; within two to four weeks, 2; one to two months, 5; two to four months, 5; four to six months, 4; six to eight months, 5; eight to ten months, 3; ten to twelve months, 5; one to two years, 2; two to three years, 1; three to four years, 1; four to five years, 1; grand total, 37. Among the females we have no record of falls on the head with fracture of the skull. Of falls on the head without fracture of the skull 3 began immediately; from one to two months, 1; two to four months, 3; four to six months, 2; six to eight months, 1; eight to ten months, 2; ten to twelve months, 2; one to two years, 3; two to three years, 1. Total, 18 cases. Of blows on the head with fracture of the skull, 1 case which occurred after one to two years; of blows on the head without fracture of the skull, 1 case occurring in four to six months. Total cases beginning immediately, 3; two to four weeks, none; one to two months, 1; two to four months, 3; four to six months, 3; six to eight months, 1; eight to ten months, 2; ten to twelve months, 2; one to two years, 4; two to three years, 1. Grand total, 20. Including both males and females, 6 cases began immediately; 2 in two to four weeks; 6 in one to two months; 8 in two to four months; 7 in four to six months: 6 in six to eight months: 5 in eight to ten months; 7 in ten to twelve months: 6 in one to two years; 2 in two to three years; 1 in three to four years; 1 in four to five years. Grand total. 57 cases.

The estimate of the whole number of epileptics in Massachusetts has been variously made. You will see from the pamphlet distributed how I have made a canvas of three towns in Worcester county and the whole of Hampden county. The results show about 1 in 550. Since this estimate was made I have had much more experience with the people in Hampden county and I have found a large number of cases which might or might not be classed as epileptic according to the point of view of the observer. I do not wish to put forward a mere guess, but if asked to guess we intuitively use our experience as a guide. I cannot doubt that 1 to 300 would be nearer the fact if all cases of unquestioned character could be ferreted out and recorded. The normal animal organism seems to be able to endure an enormous amount of irritation and to somehow adapt itself to the strained conditions. When this has been long enough continued and has produced permanent change so that inheritance of weakness is liable to follow or does actually ensue, then the disabled organism is less able to endure and it is more readily thrown out of balance.

Massachusetts General Hospital.

CLINICAL MEETING OF THE STAFF NOV. 13, 1908.

INTESTINAL ANASTOMOSES.

BY W. A BROOKS, JR., A.M., M.D.

The one essential thing in making an intestinal anastomosis is to have the joint tight. The method employed must vary with the personal preference of the operator. It so happens that, thus far, the use of Mayo Robson's bone bobbin has strongly appealed to me and has seldom if ever failed. With its use, the anastomosis can be made sufficiently quickly, the danger of hemorrhage is reduced to a minimum and the resulting opening is satisfactory.

The following cases illustrate its use and also will serve to call attention to the efforts, in three of the cases, to relieve the symptoms caused by obstructive carcinoma of the intestine.

The first case is one of a simple strangulated hernia. The patient, Mrs. G., had been suffering for nearly a week with a strangulated right inguinal hernia. When the sack was opened the liberated coil was found to be beyond hope. It was, accordingly, brought out into the wound and packed around with gauze. A few days later it sloughed away and a fecal fistula resulted. About a week later, by means of a clamp, which was allowed to remain on for twenty-four hours, an anastomosis was made just inside the abdominal cavity. Subsequently the external opening was, after two or three attempts under cocaine, closed by intestinal sutures. After allowing sufficient time for the external wound to nearly close, and after the general condition of the patient had improved, an opening was made in the median line of the abdomen. Four clamps were applied to the intestinal spur, which ended at the old hernial opening. The mesentery was cut away, two of the clamps, namely, those on the distal portion of the coil, were pushed out through the old wound and the wound itself packed with gauze. Then, by means of a bone bobbin, an end-to-end anastomosis was made and the median incision closed.

The patient made a good recovery and at the present time, in spite of the fact that she has a good-sized ventral hernia, is able to do all her housework. It is now some four years since the operation.

The second case is one of a woman fifty-five years of age who came into the hospital suffering from a carcinoma of the large intestine, situated at the hepatic flexure. At the operation no attempt was made to disturb the mass, but an anastomosis was made between the lower end of the ilium and the *lower part* of the sigmoid flexure. The anastomosis was a lateral one and the bone bobbin was used.

The patient lived two weeks, suffered from a profuse diarrhea and failed steadily.

At the autopsy, when the cancerous mass was lifted, the colon ruptured, showing that there had been but a thin membranous veil of fibrinous material between the cavity of the colon and the peritoneal cavity. The peritoneal cavity was free from fluid when first opened, and there was no acute peritonitis. The anastomosis was watertight.

The third case is that of a woman, also fifty-five years of age, who came into the hospital with the history of having had an abscess opened at one of the small out-of-town hospitals. The wound had never healed and at the time of entrance there was a fistulous opening near the umbilicus. The discharge from the opening suggested the contents of the upper bowel. The abdomen was opened and the mass found to be connected with the transverse colon. It was not in any way connected with the small intestine, but was situated near the stomach. No attempt was made to disturb the mass. An anastomosis was made between the lower end of the ilium and the *upper part* of the sigmoid flexure. The anastomosis was lateral and the bone bobbin was used.

The patient lived about four weeks, suffered from a profuse diarrhea and failed steadily.

The autopsy showed no free fluid in the peritoneal cavity, no acute peritonitis. The joint was tight. The interesting point was that the colon and stomach were bound together by adhesions and also bound to the parietal peritoneum. Section of the colon showed a cancer with degeneration of the adhering walls of the colon and stomach, resulting in several perforations in the walls and with a fecal fistula in the anterior abdominal wall.

The fourth case is one of a woman of sixty years of age, who was found to be suffering from a cancer of the cecum and ascending colon. In this case an anastomosis was made between the lower end of the ilium and the *transverse colon*, near the splenic flexure. The anastomosis was lateral and the bone bobbin was used.

The patient left the hospital twenty days after the operation and at last report was doing fairly well. The diarrhea in this case was not nearly so marked as in the other two. I am indebted to Dr. O. Richardson for the reports on the autopsies.

These cases suggest the advisability, when making an anastomosis to relieve inoperable cancer of the large intestine, of putting the lower end of the ilium as high up as possible and away from the sigmoid flexure.

I. NEPHRITIS, SYPHILIS, CHYLOUS ASCITES.
II. MYOCARDITIS.
III. PEPTIC ULCER.

BY F. C. SHATTUCK, M.D.

CASE I. CHANCRE SEVEN MONTHS AGO. RENAL ANASARCA THREE WEEKS AGO. TERTIARY SKIN LESIONS. DYSENTERY. CHYLOUS FLUID WITHDRAWN FROM ABDOMEN AND LEFT CHEST. NO REAL IMPROVEMENT UNTIL THE IODIDE AND MERCURY ARE GIVEN. RAPID HEALING OF THE SKIN. LATER DISAPPEARANCE OF DROPSY.

M. H., forty, single, iron founder, admitted the sixth of August, 1908. A primary lesion seven months ago. Alcohol to excess until seven months ago. None since. The middle of July edema appeared in the legs and has gradually extended and become general. The urine contained $\frac{7}{10}\%$ albumin. Soon after entrance, dysentery without fever. Sept. 26, 100 oz. of colorless chylous fluid was taken from the abdomen, and Sept. 28, 14 oz. of similar fluid from the left chest. The hands and feet showed tertiary lesions. Early in October, in addition to hot-air baths and hydragogues, potassic iodide and the proto-iodide of mercury were ordered. This was followed by rapid improvement in the skin lesions, while the general anasarca and the urine remained about the same until Oct. 30, when he weighed 168 lb. Soon after this the urine increased considerably in amount, otherwise remaining about the same, and his weight began to fall steadily to 136 on the fourteenth of November, by which time dropsy, both external and internal, had nearly disappeared.

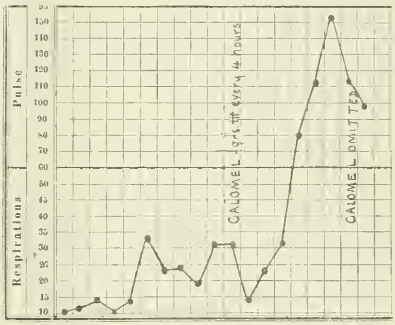
The specially interesting feature of this case is the question whether the syphilis was, in whole or in part, the cause of the nephritis. It is to be noted that tertiary lesions appeared within eight months of the primary sore; that they yielded rapidly to specific treatment; that the mercury certainly did no harm to his kidneys. The improvement in kidney action was not coincident with the improvement in the skin lesions, coming at least a fortnight later. Ordinarily I carefully avoid the administration of mercury, as of either arsenic or lead. to a nephritic, inasmuch as these metals are excreted by, and are irritating to, the kidneys, but in this case it seemed to me worth while to run the risk and there certainly has been no reason to regret having done so.

It is to be noted that his occupation, that of an iron molder, involved great alternations of temperature and exposure to chill when heated. Note also that he had given up alcohol altogether for six months before the advent of renal symptoms.[1]

CASE II. MYOCARDITIS. DROPSY. EDEMA OF THE LUNG RELIEVED BY VENESECTION. CALOMEL DIURESIS.

A sea-captain of fifty-two entered the seventeenth of October with cardiac dropsy, due apparently to myocarditis; 104 oz. of fluid was withdrawn from the abdomen Oct. 20, with slight relief. It was impossible to secure watery catharsis with salts compound, jalap powder, elaterium or croton oil. Neither digitalis nor diuretin were of any avail. Oct. 25 he became suddenly very cyanotic, with cold extremities, pink frothy expectoration and extremely irregular heart. Dr. Young, the senior house officer, took 8 oz. of blood from the arm with immediate relief to the urgent symptoms. The urine had averaged about 25 oz. a day. Oct. 28, 3 gr. of calomel every four hours was ordered, with the omission of other drugs.

Oct. 29.	Urine,	15 oz.
,, 30.	,,	22 oz.
,, 31.	,,	30 oz.
Nov. 1.	,,	80 oz.
,, 2.	,,	112 oz.
,, 3.	,,	150 oz.
,, 4.	.	110 oz.
,, 5.	,,	98 oz.



Urine in ounces · Calomel diuresis

Nov. 5 he was discharged as he was homesick, the dropsy having nearly disappeared, with great increase in comfort.

This case affords a good illustration of the efficiency of calomel as a diuretic in some cases. It was not until the fourth day of calomel administration that the urine began to increase. He had grown worse in the hospital, shown no response to the usual remedies suited to his condition and I feared that the changes in his myocardium had passed the point of possible adjustment.

CASE III. PEPTIC ULCER, WITH VERY BRIEF SYMPTOMS. HEMORRHAGE. AFTER CESSATION OF HEMORRHAGE NO BLOOD REGENERATION. DIRECT TRANSFUSION. RECOVERY.

A very hard-working widow of forty-five, admitted Oct. 25. For three weeks she had a little epigastric pain, worse after food. The last week the pain had been much worse, and she had eaten scarcely anything. Night before last, after an unusually hard day's work, she felt faint and vomited about two cupfuls of dark clotted blood; again the next morning and again this morning; stools dark-colored. Each of the two following days she vomited a pint of blood and the stools were bloody. No food by stomach. Morphia. The blood loss then stopped. She took small quantities of food by mouth and had a quart of salt solution under the skin twice a day, but she was losing strength from day to day and seemed to be unable to manufacture blood. The pulse would improve for a time after the salt solution. Her condition was so grave that Nov. 3, Dr. Hugh Cabot, at my request, performed direct transfusion from her son. She knew practically nothing about the operation and has no remembrance of it. Before transfusion the hemoglobin was 15%; white cells, 22,100; red, 760,000. An hour after the transfusion, hemoglobin, 60%; whites, 11,800; reds, 2,296,000.

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[1] Nov. 25, no hydrothorax, slight ascites, slight edema. Urine, sp. gr. 1012; albumin, $\frac{6}{10}$ of 1%. Sediment, rare cast, no blood. Is looking and feeling much better and is sitting up.

She is now taking food in fair quantity without discomfort, and gaining strength, and seems to be on the high road to recovery.

ON THE EXCRETION OF LEAD.

BY WILLIAM F. BOOS, M.D., PH.D.

Experimental work by the author and others shows that lead is excreted chiefly in the bile, leaving the body with the feces. In the acute stages of poisoning traces of lead may usually be found in the urine as well; but they soon disappear, to reappear intermittently only, while the stools show lead from the first and then continuously until the metal has been entirely excreted. For the chemical diagnosis one stool, as a rule, is sufficient.

In the treatment of chronic lead poisoning, fel bovis, acting as a cholagogue, may hasten the excretion of lead. To prevent its reabsorption from the intestine the bowels should be kept open. Pulvis glycyrrhizae compositus is especially adapted to the purpose because the sulphur contained in this preparation insures the formation of insoluble sulphide of lead.

A detailed report of the research will appear in a future number of this Journal.

ANEURYSM OF THE EXTERNAL ILIAC ARTERY.

BY FRANKLIN G. BALCH, M.D.,
Visiting Surgeon, Massachusetts General Hospital,
AND
FRED T. MURPHY, M.D.,
Surgeon to Out-Patients, Massachusetts General Hospital.

In 1902 Rudolph Matas reported to the American Surgical Association 5 cases of aneurysm which had been treated by his method of intrasaccular suture.

His first case dated back to 1888, but until the publication of this method in 1902 operative interference had been confined to ligature, galvanopuncture and introduction of foreign bodies into the aneurysmal sac, such as wire, horse hair, needles, etc. To this list of possible operations may now be added the procedure of placing constricting bands advised by Halstead.

Certain anatomical conditions may without a question of a doubt indicate any one of the other operations as the one of choice in the individual case, but when the method of Matas is applicable, as it was in the case to be reported, his operation is unquestionably the one to be preferred. It is based upon sound surgical principles. The technic offers no great difficulty. The results are most satisfactory.

The operative technic demands that the aneurysm must be anatomically accessible and that the blood supply can be temporarily controlled. A sacculated aneurysm is the ideal condition for the operation, but a fusiform type may be infolded and the blood channel so reconstructed as to offer the hope of future patency. With either type an obliterative operation can be done.

The steps in the operation are as follows: (1) Free exposure of the sac and the artery proximal and distal, (2) control of the blood supply, (3) opening of the sac and removal of the laminated clot, (4) closure of all openings into the sac other than the direct channel of the artery by interrupted or running sutures so that intima is strongly approximated to intima, (5) reinforcement of these sutures by infolding the sac wall, (6) closure of the soft parts with special care to kill dead space and give support to the blood vessel suture.

Technical points of significance are those emphasized by the work of Carrel, non-traumatization of the arterial wall by rough manipulation, the use of vaselined thread, vaseline smeared on the exposed wall, normal saline irrigation and the protection of the field of operation from the body fluids. Attention to these details insures the absence of thrombus formation.

The fusiform type demands the reconstruction of the artery over a rubber tube by drawing the sac walls together just as is done in a Witzel gastrostomy. After this first line of sutures the operation is the same as for the sacculated type.

Beginning in 1902 with a report of 5 cases, Matas has been able to tabulate the reported cases as follows: To 1905, 24 operations; to 1906, 34 operations; to June 3, 1908, 85 operations; and to date (personal communication from Dr. Matas) the number has increased to 101.

To June, 1908, the operation, including practically all the great blood vessels, in 85 cases in the hands of 52 surgeons, 49 American and 3 foreign, gave the very small number of 7 deaths, and if 5 cases, in which death was evidently due to causes other than the necessary operative risk, be eliminated, the mortality is reduced to 2.3%. Secondary hemorrhage was observed in 2 cases and gangrene in 4, in 2 of which the cause of the gangrene was really independent of the operation. Relapses were seen only in the reconstructive operations, 4 in 13.

The case here reported is the second in which an aneurysm of the external iliac has been operated upon with the Matas technic, the other case being one in which an obliterative operation was done by Levi Old.

The history of our case is as follows:

L. R. W., age eighteen, single, a wood-worker, entered the Massachusetts General Hospital, July 21, 1908.

Two years before admission he was struck in the right groin by a strip of iron which flew from a machine. A point on the end of the iron pierced the abdominal wall. This caused profuse bleeding and the patient was kept in bed ten weeks to give, as he says, "the inguinal artery a chance to heal." For more than a year there has been a swelling in the right iliac fossa which has gradually increased in size. Recently the increase in size has been more rapid. There is no soreness or pain at the point of swelling. The right foot has been swollen and the right leg has been weak.

The patient is a flat-chested, poorly-developed, sallow youth. Physical examination reveals, aside from an intermittent heart action, nothing abnormal except the tumor in the right groin. This is a rounded, tense, pulsating swelling, four inches in diameter, extending from the pelvic bone upwards and outwards, filling the right iliac fossa. It is not tender, but pressure upon it causes pain down the anterior portion of the right thigh. On palpation of the tumor a thrill, synchronous with late systole and early diastole, is easily perceived. Auscultation reveals a loud, rough, blowing sound, also synchronous with cardiac systole. There is slight pulsation in the femoral artery of the right leg. There is an area of diminished sensation on the inner side of the right thigh. No tumor could be felt on rectal examination, but owing to the patient's resistance, examination was not satisfactory.

Dr. Balch operated July 27, 1908; Dr. Murphy assisted. Gas and ether were used as anesthetics. A seven-inch median incision was made, the upper end being one and one-half inches above the umbilicus, the rectus muscle split and the peritoneum opened. Exploration showed a large, tense, pulsating tumor, filling the hollow of the right iliac bone and extending from the posterior margin of the pelvis to Poupart's ligament, which it pushed up slightly. The external iliac artery seemed to enter the mass at its upper, inner border. A second incision was made in the abdominal wall at right angles to the first, joining it at the umbilicus and extending across the abdomen to the right flank. The deep epigastric vessels were tied and cut. The flap of the right lower quadrant was then turned down, giving a good exposure of the tumor. The right rectus was divided close to the pubes in order to better expose the lower end of the sac. A Crile clamp was applied to the right common iliac artery and an almost longitudinal incision about three and one-half inches long made in the tumor. Great masses of laminated partly organized clot were removed without hemorrhage until the bottom and lower end of the sac was reached, when there was a gush of blood from the external iliac. With the sac freely opened and dry an opening was seen in the posterior outer side of the external iliac within a half inch of Poupart's ligament. More careful examination now showed that this was the only communication between the sac and the external iliac. The artery was closely adherent to the sac on the inner side, thus appearing at first to enter it at the upper inner angle, but by loosening the clamp the pulsation could be demonstrated down to the opening behind Poupart's. There was some bleeding from this opening, probably from anastomosing vessels. This was closed with fine silk sutures drawn through vaseline and so placed that intima was approximated to intima. The Crile clamp was then loosened until slight pulsation appeared beyond it. There was no bleeding from the repaired artery wall. One side of the sac, which was about 3 mm. thick, had been driven against the ileum so long that the bone had been somewhat eroded and roughened. Into this roughened surface the sac had been forced until it was impossible to dissect it off. On the inner side the sac wall was wrapped about the external iliac vessel in such a manner that it could not be freed. To add to the complications the ureter was in close apposition to the aneurysm. This necessitated some modification of the Matas method. A flap made from the upper surface of the sac was turned down from the inside and sutured with fine chromicized catgut over the repaired artery wall. Another portion from the outside was sutured over this, thus supporting by two layers the line of suture. The cavity of the aneurysm was obliterated as far as possible by bringing its walls together, but this amounted to so little that a handkerchief gauze was packed in. The walls of the sac were closed about this wick, leaving as small an opening as was consistent with early removal of the gauze. This wick was brought out at the outer angle of the transverse abdominal incision and the peritoneum sutured so that it was extraperitoneal.

The right rectus was sutured with interrupted No. 1 chromicized catgut sutures at the transverse abdominal incision and at the division at the pubes. The abdominal wall was closed by layers. Dry dressing and Dessault splint were employed to immobilize the pelvis and thigh.

The convalescence was practically uneventful. Immediately after the operation the circulation in the leg improved and the pulsation in the dorsalis pedis returned. There has been no return of the murmur nor of the pulsation in the right iliac fossa.

Following the removal of the gauze pack there was for a considerable time a profuse discharge, evidently from the sloughing blood clot and sac wall. The patient, as you see, has fairly good use of his leg and the circulation below the site of the aneurysm is normal.

TWO CASES OF EXTENSIVE THORACIC RESECTIONS: THE FIRST FOR ENCHONDROMA OF THE RIBS, THE SECOND FOR A CLOSED TUBERCULOUS EMPYEMA OF MANY YEARS' DURATION.

BY C. A. PORTER, M.D.

Case I. J. H., aged thirty-one. Entered the Massachusetts General Hospital July 3, 1908. Past history negative. Present illness: Four years ago struck his elbow against the left side. For several weeks he noticed sharp, piercing pains, which were followed by an irregular lump which was neither sore nor tender. Operation performed April 19, 1906, by Dr. Flanders, of Lawrence. The growth recurred, and two "bony tumors" were removed by him in June, 1907. In November, 1907, another recurrence took place, with steady growth, dull pain and limitation of lateral motion in the spine. There has been no loss in weight; no cough.

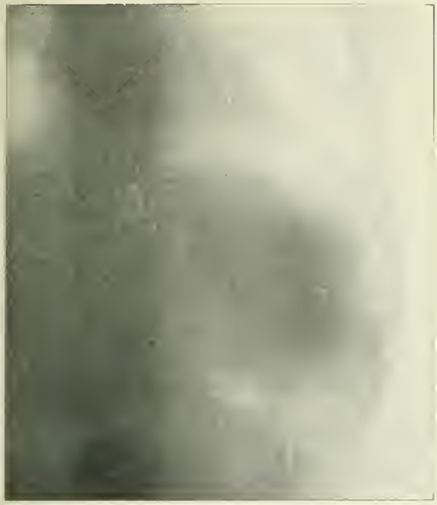
On admission examination showed a well-developed and nourished man; somewhat pale. Heart irregular; pulmonic second much accentuated; occasional murmurs over the mitral area. Pulse 96, temperature normal, no leucocytosis; urine negative. A tumor, the size of the palm of the hand, is situated below and to the outer side of the left nipple, involving the costal arch and adjacent portions of the sixth, seventh, eighth and ninth ribs. The mass was very hard, irregularly nodulated, and its posterior surface could be felt depressing the diaphragm beneath the costal margin. There was no tenderness, no redness or edema, and the unattached skin showed the scars of the previous operations. Examination of lungs negative. Diagnosis: Chondo-sarcoma or enchondroma.

In view of the repeated recurrences and the steadily increasing size of the tumor, it seemed not unlikely that the disease was malignant. The conditions were explained to the patient, and a consultation held with Dr. Fred Murphy with reference to operation and the use of his positive pressure box. I operated on July 14, with Dr. Jones as assistant, and Dr. Garland undertook the etherizing, with the aid of Dr. Murphy and four helpers. During the induction of anesthesia the patient was apparently too deeply narcotized and became cyanotic. Pulse was of good quality. Right lateral decubitus; left arm held upwards and to the right. An incision was made along the left margin of the sternum, from a point opposite the nipple, sweeping down along the costal margin, and backwards to the axillary line. This flap, containing skin and fat, was dissected upwards and backwards. The external, oblique origin was next divided two inches from the margin of the growth, the ribs were scraped bare of periosteum and the intercostal muscles severed, the vessels being picked up immediately. All of the ribs involved in the growth were then divided at this same level with rongeur forceps, and the tumor and ribs pulled inwards and slightly downwards. The pressure was raised to 8 cm. of water and the pleura freely divided. At once there was partial collapse of the lung, and a recession of the heart and mediastinum to the right. Increased pressure rapidly inflated the lung, which bobbed to and fro in the thoracic cavity. Upon further retraction there appeared, growing freely into the pleural cavity, a large mass, the size of a grapefruit, uncovered by pleura and showing the characteristic translucent whiteness of cartilage. The lung was not adherent. On careful examination it was found that the diaphragm was extensively involved in the growth, necessitating the removal of as much as four and a half inches of its anterior convexity. Both pulse and respiration were immediately and seriously deranged, in spite of increased inflation of the lungs, the heart and respiration becoming very rapid and irregular. The diaphragm was grasped firmly by large "T" forceps, and strong traction made downwards and to the left in order to steady the heart and mediastinum. In a few moments compensation occurred, and deep cyanosis was replaced by normal color. The pulse, though rapid, became regular. The costal cartilages were then quickly divided, close to the sternum, and the tumor removed. Using two pairs of double hooks to hold down the diaphragm, its anterior border was sutured with chromic catgut to the transversalis fascia and muscle, sewing from the median line outwards. The tension was extreme and the suture difficult. The lung was then grasped with blunt hooks and held close to the intercostal muscle below the sixth rib, and several sutures passed on round, curved needles, thus fixing the lung. There was slight bleeding; no emphysema. By this time the patient's condition was not good; the pulse had become rapid, and the breathing slightly labored. The remaining muscles were rapidly opposed, so far as possible, in their normal positions, with interrupted chromic catgut stitches. Next an endeavor was made to make an airtight wound by careful subcutaneous, interrupted and continuous sutures of catgut, and then a most accurate skin suture with silkworm and continuous horsehair. A small gauze wick was placed over the diaphragm, the lung was fully inflated, and the last stitches tied; the object being to leave an inflated lung, which could not collapse from leakage of air into the pleural cavity. A small piece of gauze was placed over the wound, which was then covered with a large square of rubber dam, and a voluminous dressing and swathe. The box was quickly removed and the patient left lying on the table for half an hour, at which time he was recovering from the ether, with only a trace of cyanosis and a fair pulse of 140.

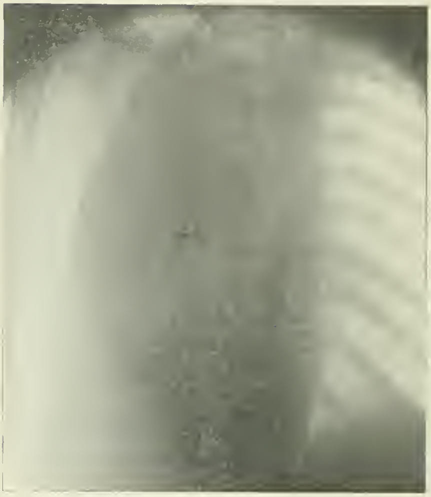
From the point of view of the operator, Dr. Murphy and Dr. Garland were able to regulate at will the expansion of the lung. Only when the diaphragm was severed was there serious disturbance of the pulse and respiration. On the seventh and eighth day, recovery seemed assured, but to my bitter disappointment, a bronchopneumonia of the right lung developed and the patient died on the fourteenth day after the operation. On the evening of the day of operation, the patient's temperature was 101, respiration 60, pulse 160. Oxygen had to be given for alarming occasional attacks of cyanosis, following extremely painful attempts at coughing. On the next day there developed a very severe purulent bronchitis, with a temperature of 103; leucocytosis of 21,000. Examination of the sputum showed pneumococci. In spite of carbonate of ammonia and oxygen, very little sputum could be raised, owing to the pain of coughing, and the mechanical difficulties present. With each cough the left side would bulge out, and thus let up intrathoracic tension. A carefully fitted and padded pasteboard splint helped conditions somewhat, but sufficient pressure to make the apparatus effective cramped the sound lung. No pneumothorax developed. By the fifth day coughing became more efficient and less painful, a considerable amount of tenacious purulent sputum being raised. On this day, also, there appeared effusion in the left chest, with well-marked succussion sounds on coughing. This was apparently caused by the constant friction of the parietes against the ends of the ribs, the skin over these pressure points becoming tender and sore, suggesting an internal decubitus. Over a pint of bloody fluid was aspirated through the flap, with marked improvement in respiration and pulse. Cultures from the fluid were sterile. There were two attacks of edema of the lungs during the first week, both of which for a time seemed critical. These were relieved by atropin and digalen. On the eighth day there was a free discharge of serum from the wound, and in spite of the excessive heat it seemed as if respiration and circulation had at last become adjusted and recovery would take place. At times a persistent hiccough was most troublesome. Throughout the convalescence there was glycosuria from one third to three per cent; for this I could offer no explanation. On July 22, the eighth day after the operation, though the temperature was only 100.5, pulse 130, and respiration 35, the white count was 47,200. On the thirteenth day after operation examination of the chest showed the left lung adherent anteriorly down to the fifth rib and to the ninth behind. Good respiratory sounds, except at the lower fifth behind, where a few râles were present. The right lung: pleural friction rub in the axillary line, with numerous diffuse râles. No dullness or bronchial breathing detected. Without especial rise in pulse or temperature, patient gradually failed on the fourteenth day, the pulse becoming weak and irregular, and cyanosis extreme. Death seemed to be due to exhaustion.

Post-mortem examination showed sound healing of the diaphragmatic wound, to which the lung was adherent. The lower half of the left lower lobe was atelectatic and leathery. Slight bronchitis of the remainder of the left lung. No infection of the wound. There was fibrinous pleurisy extending up to the third rib in front, and the fourth rib behind. On the right, there was fibrinous pleurisy over the whole lower lobe, which was filled with bronchopneumonic nodules. Similar nodules were present, though in smaller numbers, in the middle and lower part of the upper lobe. Cultures showed streptococci and influenza bacilli. Cultures from the heart and spleen were negative. The heart showed no macroscopic lesions.

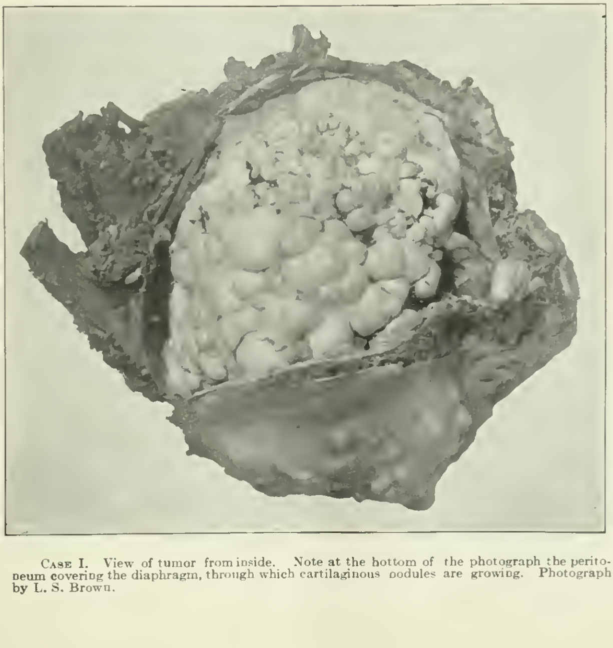
I find it difficult to come to a definite conclusion with regard to the value of Dr. Murphy's positive pressure apparatus in this case. Considerable time was used up in making the apparatus airtight, and in spite of Dr. Garland's skill I



Case I X-ray J. H. Shadow of enchondroma left lower ribs.



Case II. X-ray Lilly D. Black dot marks nipple. Whole left chest shows dark shadow. Note calcareous material close to vertebral column and the well-marked lateral curvature.



Case I. View of tumor from inside. Note at the bottom of the photograph the peritoneum covering the diaphragm, through which cartilaginous nodules are growing. Photograph by L. S. Brown.

felt uncomfortable in regard to the depth of the anesthesia and oxygenation. There was no doubt that the expansion of the lung could be regulated at will, but I think it probable that the severe purulent bronchitis, coming on immediately after the operation, was caused by the concentrated ether vapor and deficient aëration in the box. Whether this operation could have been performed without positive pressure is a matter of opinion. There was no doubt that the patient's condition became worse as soon as the pressure was reduced, but was alarming only for a few moments after division of the diaphragm. I recall very clearly a case of my father's, Dr. C. B. Porter, where he removed a sarcoma which involved three ribs and a small part of the diaphragm. In spite of complete collapse of the left lung, there was little if any change in the pulse and respiration. Other similar cases are on record. My father's patient recovered without complications, except for slight late suppuration in the wound.

As a result of his experience in this case Dr. Murphy has suggested certain improvements in the apparatus which may do away with the objectionable features, or Dr. Robinson's new positive pressure apparatus may fulfill all indications.

While it is unfair to attribute a death, fourteen days after operation, to the method of etherizing, I cannot but feel that the patient's strength was seriously if not fatally undermined by the early bronchitis, which I think was probably due to the method of anesthesia. In the future, in the absence of special apparatus, I should consider: first, the advisability of producing an artificial pneumothorax by the injection of nitrogen gas, operation to be done at the end of a week, after the lungs and heart had become adjusted to the new conditions; second, operation without either negative or positive pressure, the lungs and mediastinum to be immediately steadied by traction, as soon as the chest was opened; third, preliminary suture of the lung, after removal of a rib, and secondary operation after adhesions were firm.

Case II. Lillie D., aged fifty-one, entered hospital June 17, 1908. Family history: Father, one brother and two sisters died of consumption. Past history: "Eighteen years ago, lung trouble, when her heart was on the wrong side." She had pain through the left chest for a number of months, but was never tapped. Two years later, cough and hemoptysis. She has never been strong; a tendency to be short of breath, but has had no real illness until last December, when she had a hacking cough and pain in her left side on drawing a deep breath. Eight weeks ago, clothing too tight. Six weeks ago, lump in left side. Examination: small, pale, rather well-nourished woman. Heart: left border not determinable on account of flatness of left chest; right border three quarters of an inch from the sternal line; impulse palpable in costal angle; soft systolic murmur at apex. Lungs: left, dull down to third rib, flat below in front. Distant bronchial breathing, with diminished vocal fremitus; behind, flat at apex down to spine of scapula. Bronchial breathing with increased fremitus and numerous râles at apex. Bronchovesicular breathing below. At base, almost complete absence of breath sounds and fremitus. Few scattered râles through left back. Right chest normal save for a few râles. Over lower three ribs in left axillary line is a tumor three by four inches, which is slightly boggy; no distinct fluctuation; slight tenderness and redness. X-ray shows no necrosis of the ribs; the whole left cavity in shadow; diaphragm depressed. Temperature and pulse normal, urine negative, no leucocytosis. Diagnosis: Chronic tuberculous empyema probably of many years' duration, now gradually pointing between the ribs.

Operation under ether, June 20, 1908. Incision into the tumor showed the muscles and subcutaneous tissues honeycombed and filled with a puriform fluid, which escaped by a tortuous opening between the eighth and ninth ribs. Five ribs, for a distance of six inches, were resected, revealing the following condition: The whole cavity from apex to diaphragm was filled with a soft, semi-fluid material resembling ripe Camembert cheese. The lung was completely collapsed against the vertebral column, firm and leathery, non-crepitant. It was covered with calcareous masses which were intimately adherent to the visceral pleura. Across the center of the cavity ran a cord about the size of a lead pencil, which after division spurted blood, evidently a patent branch of the pulmonary artery. There was no lung tissue whatever in the apex. The parietal pleura was about 1 cm. in thickness, tough, bluish-red in color, showing no evidence of tuberculosis or granulation tissue. It was impossible to irrigate away the greasy contents of this large cavity, so it was rapidly wiped as clean as possible and packed with six large handkerchiefs of gauze; the margins of the skin were protected with rubber dam, over which a large dressing with swathe was applied.

Examination of the muscles and subcutaneous tissue showed no evidence of tuberculosis. Cultures were sterile. The wound was dressed with the greatest care in order to avoid secondary infection. One by one the large pieces of gauze were removed, and in spite of some fever and the drain from this large wound, the patient left the hospital in six weeks in satisfactory general condition. On Sept. 20 she returned for further operation. The wound was granulating healthily; the calcareous masses had entirely separated from the remains of the lung. No fever, no leucocytosis; hemoglobin, 80%.

Operation, Sept. 24, under ether. An incision was carried upwards two inches from the vertebral column to the level of the spine of the scapula and down to the ribs. All the muscles were scraped outward to the mid-axillary line; there was free hemorrhage. The ribs were rapidly divided with rongeur forceps up to the third, and removed with the underlying thickened pleura. No attempt was made to free the obsolete lung, and, owing to the patient's condition it seemed inadvisable at this operation to remove any more of the parietal pleura. The cavity was again packed with gauze. Convalescence was satisfactory, and the patient left the hospital on Nov. 23, 1908, in the following condition: Patient has a good appetite, sleeps well; there has been no fever for ten days. The amount of discharge is steadily diminishing. The ends of the divided ribs are covered with healthy granulations. The anterior flap has become adherent to the diaphragm and is rapidly rolling in to obliterate what was once the lower half of the chest. Further operation will be necessary, when the patient has recovered her strength, to insure the closure of the upper part of the cavity, kept open by the second, third and fourth ribs.

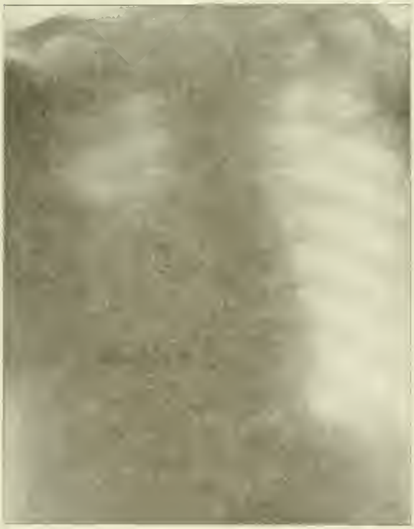
This case is interesting because it showed so many auscultatory signs, where no lung was present, and also on account of the long duration of a sterile empyema.

X-RAY PLATES OF INTERLOBAR EXUDATES.

BY A. K. STONE, M.D.

The clinician often meets with serious difficulty in determining the location of an exudate in the pleural cavity. If one side of the chest is full of fluid and the lung compressed it is a perfectly simple matter to insert a needle, preferably at the points of election, as described by Drs. Shattuck, Sears and others, and draw off the fluid.

There are times, however, when the exudate lurks in the deep recesses of the pleural cavity and seems to take special delight in eluding the exploring needle. At the same time the daily rise and fall of the temperature and the general condition of the patient makes the anxious physician feel that the exudate must be found and removed, as pus is probably present. With this in view long and often sizable needles or trocars are thrust through the chest wall, so "as to get through the thickened pleura."



Although my experience has been comparatively small, I think that the pathologists will agree with me that it is very rare to have a pleura thickened beyond a quarter to a half inch, and such rare conditions are found almost always in old long-standing cases. Therefore I feel sure that large and long needles should be discarded and that the lung should not be subjected to violence by them.

It is not uncommon to have evidences of fluid in the chest and yet be perplexed as to its whereabouts. Dullness even to flatness is usually present; the fremitus is lost; the breath sounds come to the ear faintly but still distinctly in all parts of the chest, or at times friction is heard distinctly over the whole of the dull area. Marked displacement of the heart is not apt to be found.

In cases where the physical signs are as described above the exudate will be found almost always between the lobes of the lungs.

Fluoroscopic examination of the patient in the sitting position, supplemented by an x-ray plate taken during full inspiration, may give the desired information regarding the seat of the exudate, and the picture conveyed to the examiner is very different in the cases of interlobar exudates and in the exudates localized up the chest wall.

The two plates that I have to show are both of interlobar exudates of the left side. The dense shadow is noted in each case as running from the region of the heart's apex upwards and outwards towards the axilla. In each case there is comparatively clear lung above this shadow and to a lesser extent below. It is this moderate shadow in the lower portion of the chest that makes it necessary to have the plate taken during full inspiration, so that as much light as possible shall come through the chest above the depressed diaphragm.

In the former of these cases there was profound constitutional disturbance, and on physical examination there was found a bulging of the anterior wall of the thorax over the third and fourth ribs; there was also dullness and well-marked friction sounds everywhere over the left side of the thorax, but no displacement of the heart to the right. The diagonal shadow on the plate was very dense and pus was suspected both from shadow and from the constitutional symptoms. When the chest was opened in the axillary line a large amount of clear fluid was evacuated. The examination of this exudate and the subsequent course of the disease showed this to be a case of tuberculous pleurisy.

In the second case (see plate) the shadow was no denser than in the previous plate but the fluid was found to be pus. Here the removal of the sixth rib in the anterior axillary line enabled Dr. Cobb to enter a well-defined cavity between the lobes of the lung.

I have no plate to show of a right-sided interlobar pleurisy, but from a study of the position of the lobes I should expect a similar appearance of the plate. The one patient with such a condition that I have had a chance to examine both with a fluoroscope and shadow plate, unfortunately for me, cleared up and the fluid absorbed, as proved by a later plate, the temperature also becoming normal. Therefore there was no operation to demonstrate the accuracy of the examination.

Looking at an anatomical plate of the chest with the lungs represented in place, it will be seen that the sulcus between the two lobes of the left lung crosses the anterior axillary line at about the fifth space or beneath the sixth rib, and a resection of this rib allows the circumscribed exudate to be evacuated without injury to the lungs. On the right the place for operation in front would probably be by the removal of the fifth rib in the axillary line.

I have been lead to show these plates to-night because a hurried glance through the textbooks on x-rays and some of the more important x-ray journals has failed to show me reproductions of this condition.[1] This has surprised me, for by the men about this hospital who are in the habit of making a study of chest conditions by means of the x-ray, it is a well-recognized condition.

I. SPASMODIC TORTICOLLIS CURED BY OPERATION.

II. HEMORRHAGE IN JAUNDICE CONTROLLED BY BLOOD TRANSFUSION.*

BY FRED T. MURPHY, M.D.

It is the purpose of the report of this case to call attention to certain general features of spasmodic torticollis and to emphasize some of the essentials in the surgical treatment. An indefinite pathology and etiology in any condition lead of necessity to empirical treatment; hence the surgery of spasmodic wryneck is empirical.

Spasmodic torticollis falls into the general class of the tics. Surgical experience everywhere has been that operative interference in the true generalized tic is useless. Without attempting to differentiate too finely, there is a subdivision of these cases where the irritative lesion is sharply localized and where the condition of the neck muscles is one of spasm rather than the clonic more or less irregular contraction of true tic. This is the type in which operation may offer relief. Where there is evidence that the condition has involved, even slightly, other muscles than the rotators of the head, operation is contra-indicated.

Whatever may be the pathology, certainly in practice in nearly all cases two sets of muscles are concerned in the rotation of the head: anteriorly, the sternomastoid innervated by the spinal accessory, and posteriorly, on the other side, the posterior rotators, all of which are supplied by the posterior divisions of the upper four cervical nerves. Therefore, any surgical attack should be anterior and posterior.

Section of the spastic muscles as originally proposed by Kocher, if sufficiently radical, relieves the condition temporarily and apparently in some cases permanently, but at least on theoretical grounds the muscles with their new formed scar tissue are quite as capable of pulling the head as they were originally, and practically this is only too often the result.

Keen formulated an operation for section of the spinal accessory nerve and the posterior divisions of the upper cervicals in 1890. What general results have followed that procedure it is impossible to judge accurately because the type of case and the technic have differed so widely with different men. It is this operation with certain technical modifications which is in favor at the National Hospital in London, and there, certainly, the results have been most encouraging. With us here at the Massachusetts General Hospital this operation has not been systematically employed.

The spinal accessory nerve is readily found as it enters the muscle at the level of the angle of the jaw by turning the sternomastoid outward. Section of this not only paralyzes the sternomastoid, but gives a shoulder drop as well. Yet I think that as you look at this patient you are not impressed by the terrible deformity of the shoulder. The posterior cervical nerves are reached by turning back an angular flap with the cross incision running at the level of the mastoid process, and the longitudinal in the median line or slightly to the side. This flap includes the muscles down to the level of the suboccipital triangle and the semispinalis colli. At this level the posterior branches of the occipital nerves and the suboccipital are isolated and resected. The suboccipital is easily found as it comes up out of the suboccipital triangle. The great occipital acts as a convenient anatomical guide to the rest of the plexus, but anatomically a proper operation is hardly possible. The whole field must be gone over with electrodes, and only by careful electrical stimulation can each branch be found with certainty. The obliquus inferior is so apt to conceal nerve filaments that it should be resected *en bloc*.

The wounds are closed without drainage and the convalescence is usually uneventful. The operation is bloody and tedious. The effectiveness of the operation depends absolutely upon the thoroughness of the nerve resection. The operative risk is practically nil. The after-care consists in keeping the patient quiet and in bed, with the head supported by sand bags, for a period of four to six weeks. While in bed and after getting up the wearing of any supporting apparatus, such as a Thomas collar, is contra-indicated, as it has been found that these supposed supports simply tend to increase the spasm. Systematic movements of the head are to be practised along the same lines as recommended by the neurologists as treatment in the non-operated cases.

Case I. P. A. F., twenty-seven, single, Massachusetts General Hospital No. 158,852, entered the West Surgical Service on June 15, 1908.

The family history and patient's history are unimportant. As a watchmaker in the Waltham factories the man had to turn his head regularly to the left. He had been employed at this work for years. Suddenly in March, 1908, a spasmodic turning of the head to the left appeared. The intensity of the spasm gradually increased until at the time of entrance the head was held sharply turned toward the left most of the time and it was not possible for the patient with his hands to hold the chin in the middle line. The spasm of the sternomastoid and posterior rotators was marked. There was no spasm of muscles other than the rotators of the head. He had been treated in the Neurological Out-Patient Department and had been in the neurological ward, where he had been treated without relief.

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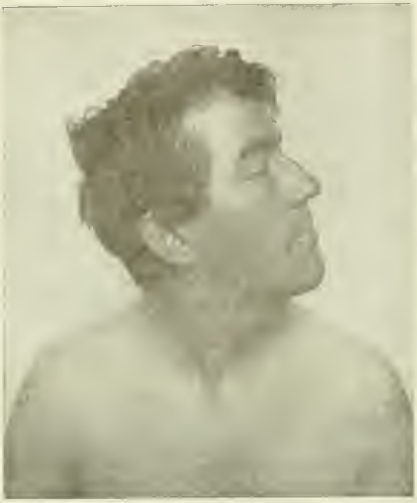
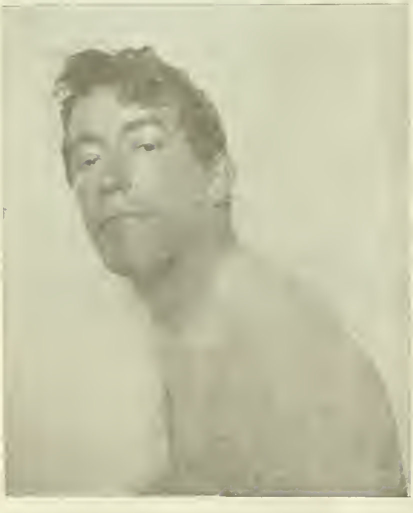
[1] Béclère's L'examen radioscopique des plevres interlobaires et le diagnostic de la sclérose de l'interlobe. Bull. et mém. Soc. Méd. d. hôp. de Paris, 1902, 3. s., xix, 157.

This paper reports a case of interlobar sclerosis, giving interesting technic as to the method of taking the plates. He has, however, seen no cases of interlobar exudate.

* For the privilege of operating and reporting these cases I am indebted to Dr. F. G. Balch.

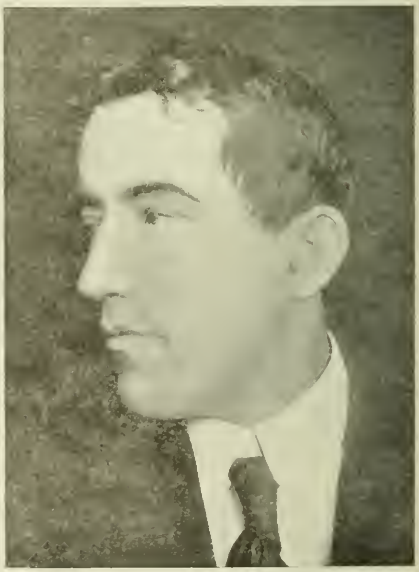


Before operation. To show the position in which the head was held.



Before operation. To show the position in which the head was held.

At the first operation on June 21, 1908, the spinal accessory nerve was resected and an attempt made to resect the posterior divisions of the upper four cervical nerves. This operation failed because of poor technic. Before the patient came out of the ether there was definite spasm of the posterior rotators, demonstrating conclusively that the nerves had not been resected. After a period of rest and attempted re-education of the muscles, without success, the second operation was done on July 14. At this time the approach was through solid scar tissue, which greatly increased the operative difficulties. A more careful and systematic search was made with the electrodes, and it was found that only the superficial branches of the posterior cervical plexus had been cut at the previous operation. Even at this time, on account of the scar tissue, it was questionable whether the suboccipital had been resected at the upper level.



After operation. To show extent of rotation to the right.

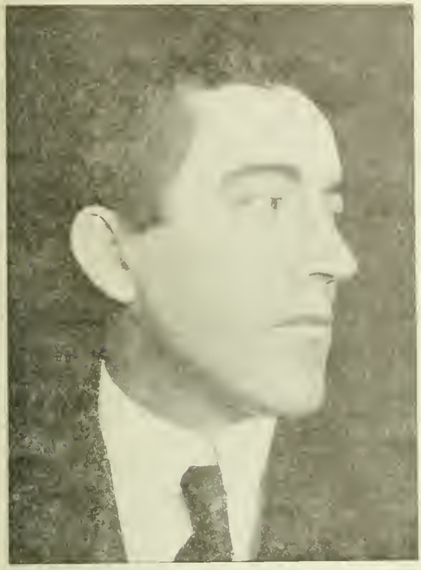
The convalescence was uneventful. The chin could be held voluntarily in the middle line, but in extreme rotation there was some slight spasm of the posterior rotators which disappeared completely on passive motion of the neck. As you see, the man is completely relieved of his spasmodic torticollis. There is no limitation of the movements of the head. The shoulder drop on the right side is an insignificant deformity and does not interfere with his work.

Case II. Mrs. D. D., forty-eight, married, Massachusetts General Hospital No. 159,568, demonstrates certain clinical and laboratory features which are of interest. The abstracted history is as follows:

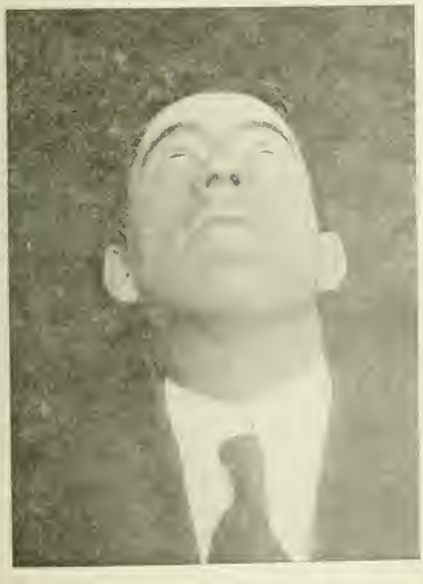
She entered the Massachusetts General Hospital in the West Surgical Service, Aug. 2, 1908. For seventeen years she had had periodical attacks of severe abdominal pain with jaundice and clay-colored stools. Three weeks before entrance she was seized with sharp abdominal pain and vomiting, and soon afterward became jaundiced. The pain has continued and was typical of gall stones. The jaundice increased in degree. The stools have been clay-colored since the beginning of the attack. There has been the last day or two slight vaginal hemorrhage, but this was attributed to an old endometritis.

Examination showed a poorly-nourished, deeply jaundiced woman with pulse of 160; temperature 102.6°. The white count was 36,000. There was spasm in the right upper quadrant of the abdomen, and in the region of the gall bladder a tender mass, deep-seated, was palpable. The character of the pulse contra-indicated operative interference and the patient was sent to the ward.

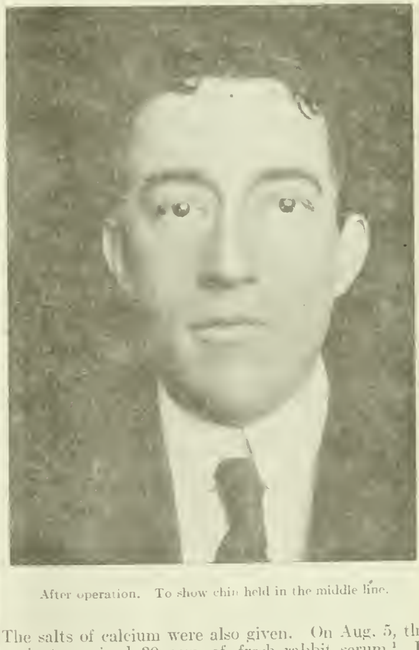
A subpectoral infusion of normal salt solution was ordered every six hours and rectal enemata. During the night following admission there was some slight bleeding from the vagina. The general condition remained about the same. On Aug. 4, the second day after admission, there was severe nasal hemorrhage requiring packing. Later there was severe hemorrhage from the rectum and vagina. In the morning, 30 ccm. of horse serum was given. This serum was over eight days old. Twelve hours after giving the serum there was very severe hemorrhage from the vagina. In the packing both dry gauze and adrenalin gauze were used.



After operation. To show extent of rotation to the left



After operation. To show chin held in the middle line and head thrown back.



After operation. To show chin held in the middle line.

The salts of calcium were also given. On Aug. 5, the patient received 30 ccm. of fresh rabbit serum.[1] It seemed to control the hemorrhage in a degree, but the bleeding still persisted at an alarming rate, and the patient's general condition was poorer. On Aug. 6, the patient sank into a condition of stupor. Hemorrhages from all the mucous surfaces continued. Thirty centimeters of fresh rabbit serum was again given. In the evening of this day, the condition was all but hopeless. Constant ooze from the packed mucous membranes continued. The coagulation time measured by the modified Brodie-Russell apparatus was 13+ minutes.

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[1] For this fresh serum I am indebted to Dr. Lawrence Strong.

On the evening of Aug. 6 the patient was transfused, the husband acting as donor. The ordinary technic was employed, that is, the radial artery of the donor was united to the superficial vein of the recipient with the Crile canula. On Aug. 7, twelve hours after the transfusion, the coagulation time of the blood was between three and four minutes. The general condition of the patient was markedly improved. On Aug. 7, the gall bladder was opened as rapidly as possible, a large number of stones were removed and a drainage tube tied in. No attempt was made to reach the stone in the common duct.

From this time on the course of the case was that of any sick cholecystostomy. Several times there was slight bleeding from the mucous surfaces, but nothing of consequence, and the coagulation time remained at three minutes and a fraction. The jaundice cleared up rapidly. The wound healed by first intention. The patient went home on Sept. 12, and recently has been reported as being in good condition.

To summarize. — The condition of stone in the common duct was unquestionable. The continued bleeding from the throat, nose, mouth, vagina and rectum was unusual. The use of the ordinary methods of controlling hemorrhage was without effect. The rabbit serum, while not given an extended trial, seemed to have but little influence on the coagulation time of the blood or the hemorrhage, the coagulation time remaining at 13+ minutes after two injections of 30 ccm. of fresh rabbit serum and one injection of horse serum. Leaving out of consideration any discussion of the active factor in the coagulation of the blood in these jaundice cases, it is evident that something contained within the transfused blood did influence the coagulation time in a most remarkable manner. Examination with the modified Brodie-Russell instrument showed a drop of from 13+ minutes to less than four minutes within twelve hours after the transfusion. The effect of transfusion was absolutely typical, that is, the skin changed from the dry, scaly skin of extreme jaundice to the soft, oily skin of an infant. A rosy flush appeared on either cheek; the flesh felt plump and soft; the character of the pulse became good.

The transfusion itself illustrated one technical point, mention of which may save some one else from a like calamity. Without giving any thought whatsoever to the question, I used in the first arm a solution of cocaine plus an unnecessarily large amount of adrenalin. When the anastomosis had been made, it was found that no blood came through the artery; in fact, with the sharp cut across the radial there was no bleeding. As the trauma had not been excessive, it must have been that the adrenalin had some influence on the contraction of the vessel. On the other arm without the adrenalin the result was immediately satisfactory.

In this case, as it has seemed easier to me doing the operation on animals, I threaded the artery through the canula and drew the vein over the artery, rather than the usual procedure as demonstrated by Crile of threading the vein through the canula.

A DIFFERENTIAL STAIN FOR NUCLEATED RED CELLS.*

BY L. H. NEWBURGH, M.D.,
Medical House Pupil, Massachusetts General Hospital.

ALL those who have studied blood smears from pernicious or secondary anemia must have found it difficult at times to distinguish between the large nucleated red cell (the so-called megaloblast) and the lymphocyte. While it is not necessary for diagnostic purposes to know the percentage of nucleated red cells in a given case, it is, nevertheless, interesting and satisfying to be able to pick out with certainty every nucleated red cell in a preparation.

The method to be described below is offered as a means of settling this point.

Cover glass smears of blood are made in the usual way and allowed to dry in the air. They are then fixed by covering them with a saturated solution of corrosive sublimate. This is prepared by placing about 15 gm. of corrosive sublimate crystals and 5 gm. of sodium chloride in an Erhlenmeyer flask and adding about 30 ccm. of water. The flask is heated over a Bunsen flame to boiling and then cooled in running water. The solution is either poured over the cover slip in a holder or the cover glass is placed in a dish containing some of the fluid. The preparation is allowed to remain in the corrosive sublimate for one minute. It is then washed in running water and placed in a dish containing a 1% alcoholic solution of eosin (alcohol soluble) and allowed to stain for one-half hour. At the end of this time it is removed, washed in running water and covered with Loeffler's methylene blue. After fifteen minutes the blue is washed off and the smear is then decolorized with 95% alcohol until no more blue color comes out. This takes about one minute and should be thoroughly done. The cover glass is then washed, dried between sheets of filter paper and mounted in balsam.

In such a preparation, all the red corpuscles are stained red. The nucleated red corpuscles, whether so-called megaloblasts or normoblasts, have a red cytoplasm as well as the non-nucleated ones. Occasionally one sees a nucleated red cell which is so richly stippled that the cytoplasm at first sight looks purple, but on closer inspection the appearance is resolved into a deep red homogeneous background, very thickly set with blue granules. The nuclei are of two varieties, depending on whether the cell is a "normoblast" or a "megaloblast." In the former the nucleus appears as a homogeneous blue-black mass, while in the latter it is vesicular, with the chromatin filaments and granules well defined. The lymphocytes, on the other hand, are always a rich blue throughout and frequently show very little detail, the nucleus being scarcely distinguishable from the rest of the cell. The nuclei of the polynuclear leucocytes show a good deal of detail, while the rest of the cell is either stained a pale pink or appears merely as a halo around the nucleus. There is no granulation. The nuclei of the

*This paper was read by title.

eosinophiles are like those of the polynuclears; the granules are, of course, stained a brilliant red.

No attempt is made to offer this stain as a substitute for the well-known Wright's stain in routine work.

I am very grateful to Dr. J. H. Wright and Dr. Oscar Richardson for many suggestions and permission to use the laboratory.

Medical Progress.

PROGRESS IN THE THEORY AND PRACTICE OF MEDICINE.

Diseases of the Heart.

BY FRANCIS W. PALFREY, M.D., BOSTON.

The present decade has been marked by great advances in our knowledge of the heart. In the laboratories of physiology Hering, Erlanger, Howell, Carlson and others too numerous to mention have been carrying on experimental studies which have brought to light an increasing body of evidence of important bearings. In the clinical world the works of Mackenzie[1] and of Wenckebach,[2] as well as the clinical portions of Erlanger's work, stand pre-eminent and far-reaching in their influences upon medical thought.

The past two years, the period which this article aims primarily to report, have contributed and added to this movement. The results of these two years may perhaps be less striking than some of former years, yet the bulk of careful investigation along new lines has been great, and by the summation of findings of many investigators rather than by single discoveries matters formerly obscure are becoming better and better understood.

PHYSIOLOGICAL STUDIES.

The investigations of the physiological laboratories have been chiefly along established lines. The old discussion as to whether the cause of the heart beat is neurogenic or myogenic has been continued, marked chiefly by the conversion of H. E. Hering,[3] formerly a leading adherent of the myogenic theory, to the neurogenic camp as the result of observations of the power of the accelerator nerves to produce automatic beating in arrested hearts. The relation of salts and their metabolism to the heart-beat has been studied by Kronecker,[4] by Carlson,[5] by Benedict[6] and by Howell and Duke.[7] Guthrie and Pike[8] have shown that the pressure within the coronary arteries possesses great influence on the activity of the heart. Erlanger,[9] with Blackman,[10] has continued his studies of the conduction of stimuli. Stassen,[11] Schmidt-Nielsen[12] and Rautenberg[13] have conducted experimental researches upon the successive events in the cardiac cycle, the last author by means of the esophageal cardiogram. Schieffer,[14] Kulbs,[15] Stadler[16] and Grober[17] have proved in animals and in man that muscular work may cause hypertrophy of the heart. Selig,[18] Gordon,[19] Dietlen and Moritz,[20] Beck and Epstein[21] and Schott[22] have studied the behavior of the heart after severe exertion in exhausting athletic exercises. Of these Schott alone maintains that dilatation occurs, and publishes radiographic evidence. The others dispute the occurrence of such dilatation.* Some of these authors suggest insufficient circulation in the heart as a cause of the heart weakness in exhaustion. This theory is somewhat supported by the observation of Eppinger,[26] who determined the ratio between the diameter of the coronary arteries and the weight of the heart in normal hearts and in insufficient hearts, and found in the pathological cases that the arteries were relatively smaller.

An interesting observation perhaps of important bearing upon pathological physiology is that of Wiesel,[27] who reports that in 22 cases of heart hypertrophy from chronic nephritis he found an increase of the chromaffine tissue of the adrenal glands, whereas in acute nephritis and in heart hypertrophy without nephritis no such change was present.

CLINICAL STUDIES BY NEWER METHODS.

But more novel and of more general interest are the clinical studies of recent years, characterized by the application of physiological teachings and physiological methods to clinical problems. In the past half century the clinicians dropped far behind the physiologists in the employment of exact methods, but recently a distinct tendency to development of more scientific clinical methods has appeared.

The first important expression of this tendency appeared when, in 1902, Mackenzie published his work, "The Study of the Pulse," demonstrating the value of graphic methods of studying clinical cases. In principle his methods were not new. They had been in use by physiologists for more than half a century since the early works of Ludwig and Marey. They had been in use to some extent by clinicians, notably by Gibson,[28] but their previous clinical application had been desultorily conducted and insufficiently followed. Mackenzie proved by his enormous collection of tracings made by means of his portable polygraph that these methods are not beyond the reach of every physician. He further led the way to important discoveries in his able use of the hitherto neglected venous pulse. The arterial pulse has been studied from time immemorial, but this gives evidence of the action only of the left ventricle. The venous pulse taken at the same time gives us in addition evidence of the behavior of the right auricle and in some cases also of the right ventricle.

The venous pulse, observed chiefly in the internal jugular vein, is a phenomenon of variable distinctness, but when carefully sought for in individuals in the recumbent position is of such frequent occurrence that it is to be considered as physiological. By means of cup-shaped receivers connected by tubes with tambours and writing levers, graphic records may be taken of the form of the venous pulse wave. The form of this wave studied in a large number of cases shows very

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[*] In this connection may be mentioned the clinical papers of Wachenfeld,[23] of Cheinnisse[24] and of Robinson,[25] all concluding that over-exertion alone is not able to cause acute dilatation of the heart.

definite characteristics in normal cases and variations from these in abnormal cases. It is beyond the scope of this article to describe the venous pulse in all its details; for this the reader is referred to Mackenzie's book [1] or to articles by Mackenzie,[29] Hirschfelder,[30] Fredericq [31] and Piersol.[32] It is sufficient to say that the chief wave of the normal venous pulse undoubtedly represents the contraction of the right auricle and occurs just before the ventricular contraction, whereas in abnormal states this wave may be absent, may be multiple, may be delayed or may be obscured by a larger abnormal wave as in tricuspid regurgitation. Thus in venous tracings taken simultaneously with cardiograms or arterial sphygmograms we may obtain evidence of absence of the auricular beat as shown by Mackenzie,[33] of auricular beat in abnormal time, relation to the ventricular beat as was done by Bonniger [34] with verification by the radioscope, of the backward rush of blood in tricuspid insufficiency and of the multiple dissociated auricular and ventricular beats of Stokes-Adams disease described more fully below. The influence of Mackenzie's publication has given a strong impetus to the study of the heart by further application of his methods.

Another work of lasting influence is that of Wenckebach,[2] "Arrhythmias of the Heart," published in 1903. This work attempts with considerable success to analyze irregular action of the heart in man according to the principles laid down by Engelmann [35] in analyzing the heart action of experimental animals. The extrasystole or premature beat so frequently observed in man is shown to be identical with the contraction obtained by electrical or other stimulation of the exposed animal heart. Disturbances of stimulus conduction, of contractility, of excitability and of automatic stimulus production are closely studied as they occur in experimental conditions with parallel observations upon their occurrence in man. Tracings from the arterial pulse and the apex beat accurately measured are the chief basis for these studies. The venous pulse is less employed by Wenckebach than by Mackenzie, although its importance is fully recognized. Old clinical terms for types of arrhythmias such as the *pulsus irregularis*, *pulsus inequalis*, *pulsus bigeminus*, *pulsus intermittens*, etc., it is urged, should be given up since they do not denote always the same condition. The *pulsus intermittens*, for instance, may be due to extrasystoles or to disorders of conduction or contraction. The *pulsus bigeminus* is due almost, but not quite always, to extrasystoles. Paroxysmal bradycardia, it is interesting to note, is attributed to a disorder of conduction at the auriculo-ventricular groove in this work two years before Erlanger's more conclusive and, in America, better known, publication of the cause of Stokes-Adams disease.

This work of Erlanger's [36] also deserves special consideration, both as a striking illustration of the successful application of physiological and newer clinical methods, and for its great influence upon subsequent work. The normal contraction wave of the heart, as proved by His, Jr.,[37] in 1903, passes from the auricles to the ventricles through a single bundle of muscle in the septum of the heart. Erlanger found that, by compressing this band of muscle in animals, partial or complete blocking of impulses could be effected. Further, by venous and arterial tracings, he was able to show an exact parallel between a case of Stokes-Adams disease recovering under anti-syphilitic treatment and experimental animals in which the bundle of His, Jr., was compressed.

It is in directions suggested by these works and by methods developed from the same sources that the most novel and distinctive studies of the past two years have been conducted. The employment of graphic methods has rapidly become more general, and by increase of familiarity with their results matters formerly neglected or but vaguely understood are becoming systematized and by the concurrent results of many observers crystalized into such form that they may become facts of general knowledge.

(To be continued.)

Reports of Societies.

THE AMERICAN DERMATOLOGICAL ASSOCIATION.

Thirty-second Annual Meeting held at Annapolis and Baltimore, Md., Sept. 24, 25 and 26, 1908.

(Concluded from No. 25, p. 837.)

A CHRONIC, ITCHING PAPULAR ERUPTION OF THE AXILLÆ AND PUBIC REGION.

By Dr. John A. Fordyce. The patient was a housewife, forty-eight years old, the mother of eight children. She was born in Austria. Her family history was unimportant, as was also her past history, excepting for the fact that for many years she had suffered a great deal from constipation and headaches. She had not menstruated for five years. The eruption began about eighteen months ago, and when she was first seen it was of eight months' duration and was at the height of its development. It was limited to the hairy parts of the axillary and pubic regions, and the patient said it began as an intense itching and burning, which was soon followed by the formation of papules. The lesions consisted of translucent, smooth, shiny, semi-spherical papules, from a pinhead to a small lentil in size, each with a tiny central puncture and a minute whitish plug. The hair, after the appearance of the papules, became dry, brittle and lusterless and fell out. Over the pubes, however, the alopecia was only partial. In this region the excoriation of the papules was more marked than in the axillæ; otherwise, the lesions were the same. The patient complained of continuous burning and itching, the latter being so intolerable that she was deprived of sleep at night. In consequence of this she became very nervous and depressed, but aside from this there were no constitutional symptoms. A number of complete urinary examinations revealed only a moderate amount of indican. Microscopically, tissue from the axillæ showed the lesions to consist of an acanthosis, most marked about the sweat duct, and a hyperkeratosis in the form of a plug, filling the mouth of the duct.

Edema was present both intra- and extra-cellularly, and contiguous to the duct minute vesicles had formed. In the corium, the striking feature was the dilatation of the sweat coil.

The treatment was very discouraging for several months. She was given anti-pruritics in increasing dosage, cathartics and tonics, but without benefit. The x-ray was employed for several months, but likewise it failed to give relief. Some benefit was obtained from the thyroid extract, given internally. During the summer she went to the seashore and bathed in the surf daily for two weeks with considerable benefit. When last seen, a week ago, she still complained of some pruritus and burning in the axillæ, but the papules had diminished in size. The scalp was never affected.

Dr. George F. Harding, of Boston, mentioned a case which differed somewhat from the case reported by Dr. Fordyce. In the speaker's case there was pruritus, with practically no eruption, in the axillæ and pubic regions, accompanied by alopecia. The pruritus was intense and there was finally complete alopecia in the regions involved, and also alopecia areata of the scalp and face and loss of both eyebrows. The condition resisted treatment for a long time and was finally relieved by the use of resorcin ointment, with 1% of carbolic acid. In the course of time the hairs returned.

Dr. Charles J. White, of Boston, suggested that the eruption was probably a keratosis pilaris, which had occurred in those regions of the body where there was excessive sweating, which might have resulted in maceration of the skin and subsequent exfoliation.

Dr. Fordyce, in closing, said the case was not a keratosis, as shown by the histological findings.

PEMPHIGUS AND BULLOUS DERMATOSIS. NOTES ON SOME PERSONALLY OBSERVED CASES.

Dr. James M. Winfield, of Brooklyn, said that during the past two years he had seen 8 cases of the pemphigoid type of eruption which were sufficiently interesting to warrant reporting. Until a few years ago, pemphigus and the pemphigoid bullous skin diseases were rarely seen in his practice, but recently they had become fairly common, the increase probably being due to the great influx of certain foreigners. Of the 8 cases reported by the author, 2 were instances of pemphigus foliaceous. The other cases were examples of pemphigus vegetans, pemphigus neonatorum, erythema bullosa vegetans or dermatitis herpetiformis and bullous erythema. In 2 of the cases treated by a vaccine prepared from the killed cultures made from the bullous contents there was a marked improvement in the general condition of the patients and in the appearance of the cutaneous eruption.

Dr. E. Wood Ruggles, of Rochester, referred to an epidemic of pemphigus neonatorum occurring at the Rochester City Hospital between January and March, 1907.

Dr. Pollitzer said that all were agreed that pemphigus merely presented a symptom of a number of different diseases. What the actual disease was we were completely in the dark about at present, and it was only by a study of many cases that we might hope to get a clear conception of the actual nature of the process.

Dr. Hyde said that during the past year he had seen 3 cases of pemphigus vegetans, all terminating fatally.

Dr. Hartzell, referring to pemphigus neonatorum, said we must not forget that a very considerable number of these cases were cases of impetigo contagiosa occuring in the newborn child.

Dr. Edward B. Bronson, of New York, reported a case of pemphigus vegetans which showed very marked improvement under local applications and arsenic internally.

Dr. Pusey said it was as futile to generalize on the etiology of the bullous dermatoses as it was on the vesicular dermatoses. Personally, he held the view that all cases of bullous erythema multiforme were probably of toxic origin.

CANCER EN CUIRASSE.

Dr. Sigmund Pollitzer, of New York, read a paper on this subject which contained a detailed clinical description of the condition, together with its histopathology.

Dr. Zeisler said that in his experience these cases rarely came under the observation of the dermatologist.

Dr. Hyde said he was surprised to learn that these cases were regarded of such infrequent occurrence. Several years ago he published a paper in which he reported three instances of *cancer en cuirasse*, and since then rarely a year passed that such a case did not come under his observation. One perfectly characteristic feature of this affection was the edema of one limb, usually the arm on the affected side, which he had always supposed was due to obstruction of the lymphatics.

The discussion was continued by Drs. Fordyce, Ruggles, Charles J. White, Ravogli, Schalek and Robinson, and was then closed by Dr. Pollitzer.

ACNE VULGARIS.

Dr. T. Casper Gilchrist, of Baltimore, discussed this subject and showed a number of cultures and microphotographs bearing upon the etiology of the disease.

Second Day, Friday, Sept. 25.

MODERN DERMATOLOGICAL PATHOLOGY AS RELATED TO PRACTICAL THERAPEUTICS.

Dr. M. B. Hartzell, of Philadelphia, in opening the discussion on this subject, said the relation which pathology bore to the treatment of disease, although at first glance easy of definition, was actually difficult to define, because our knowledge of the nature and causes of most diseases was imperfect. A considerable number of diseases were successfully treated long before their pathology was known, as, for example, malaria and syphilis. In a limited number of diseases of the skin modern notions of pathology had more or less influenced the treatment. In eczema, especially, parasiticides were employed because of the theory that micro-organisms played an important rôle in its production. On the other hand, in psoriasis and lichen planus, pathology played no part in the treatment. In the vegetable parasitic diseases, pathology and therapeutics went hand in hand, although even in these successful treatment did not wait upon pathology, since they were successfully treated long before their real nature and etiology were understood. That the recent great increase of our knowledge of the pathology of the skin was beginning to bear fruit was shown by the successful employment of bacterial vaccines and various sera; and the treatment of diseases of the skin was apparently soon to be placed upon a scientific basis as the result of our better understanding of morbid processes.

Dr. Charles J. White, of Boston, in continuing the discussion of the subject of "Modern Dermatological Pathology and its Relation to Therapeutics," said that during the past twenty years our pathological knowledge of cutaneous diseases had greatly increased, owing to our improved histological technic, our deeper understanding of biochemical reactions and the almost universal participation in pathological investigation of our modern dermatologists; and as a result we had very complete histological data concerning practically every recognized dermatosis. So intimate, indeed, was this knowledge that it did not seem to be an exaggeration to assert that we knew all that could be known of this valuable and fascinating subject until some brilliant genius should devise some new means of study and research. After briefly reviewing the gist of our present knowledge of the seat and the nature of the changes in cutaneous diseases, the author stated that keen ability in diagnosis and profound knowledge of pathology were not sufficient accomplishments to enable the practitioner to cure disease. The physician must also be a master of therapeutics. What had been our classical knowledge of healing agents and their physiological action? In the recent past, the chief methods of administration of drugs had been by internal and external means. Drugs plus electricity and the knife had constituted our therapeutic armamentarium up to within a few years. For the past ten or fifteen years, however, the science of dermatology had not remained stationary, but had advanced *pari passu* with all other human activities, and during that prolific epoch many new forms of treatment had been discovered and had rendered invaluable service to our successful struggle with disease. Among these innovations and discoveries which were discussed by the writer in detail were new drugs, radiotherapy, electrotherapy, actinotherapy, hydrotherapy, organotherapy, psychotherapy, congelation, hyperemia, and, lastly, the wonderful and pregnant theories and applications of the various sera.

Dr. Fordyce referred to the treatment of skin diseases by vaccines as an instance in which pathological knowledge was of distinct advantage in therapy, and spoke of a specific instance of his own in which staphylococcus albus vaccines had been of great benefit in treating a vegetating dermatitis.

Dr. Bronson said that unquestionably, through the investigations of pathologists, enormous benefits had accrued to the study of dermatology, but he raised the query whether, perhaps, the pendulum was not swinging a little too far the other way. In many cases the skin affection was due to the particular susceptility of the patient, and we should extend our investigations in that direction and try to learn how to increase the resistence of the skin to the infections it was susceptible to.

Dr. Ravogli, in speaking of the reaction to tuberculin injections, said the reaction would occur in those cases where a local tuberculosis of the skin was observed in a patient with general tuberculosis, but with a local tuberculosis only the reaction was absent. He recalled a case of tuberculosis cutis of the knee in which he gave the injections three times, always with negative results.

OBSERVATIONS ON THE USE OF LIQUID CARBON DIOXIDE.

By Dr. Joseph Zeisler, of Chicago. The writer was guided in his work with liquid carbonic acid largely by analogy to liquid air, and he regarded the new agent as a genuine enrichment of our therapeutic resources in quite a number of anomalies of the skin. After briefly referring to the technic he discussed the physiological effect of carbon dioxide snow upon the skin and called special attention to its sero-tactic action and consequent increased phagocytosis.

He found the method of signal value in lupus erythematosus, of which he had treated 6 cases with apparent success. He reported 13 cases of epithelioma, some of which were symptomatically cured after one single thorough application. In other cases he followed the treatment by x-ray exposures. He did not attempt to pronounce a final judgment about the value of this treatment, as sufficient time had not elapsed, but he compared the method favorably with other well-recognized means of handling that disease, such as curettage, caustics, surgical removal and x-ray treatment. He confirmed the observations of others in regard to its value for the removal of naevi and warts. He had also used it successfully in cases of keratosis palmaris, indurated patchy eczema, adenoma sebaceum, chloasma, keloid and some other dermatoses.

Dr. William T. Corlett, of Cleveland, said that in making the applications of carbon dioxide, the technic was very important. In lupus erythematosus he had had marked success in mild cases, but they had not been permanent. Perhaps the applications were not made sufficiently long, but up to the present time he could not report a permanent cure by this method in lupus erythematosus. In multiple naevi, especially in young children, he had used it with great success, and was especially pleased with the absence of pain following the applications, which were made with the greatest ease.

Dr. Hyde said he had recently used the carbon dioxide with marked benefit in a large naevus, one of gigantic formation, on the hip and thigh of a young woman.

The discussion was continued by Drs. Pollitzer, Schamberg and Pusey, and was then closed by Dr. Zeisler.

SYPHILIS IN ITS RELATION TO GENERAL PARALYSIS OF THE INSANE.

Dr. Andrew P. Biddle, of Detroit, in this paper, called attention to the increasing percentage of general paretics among the insane and the influence of the various factors in the syphilitic's life as a cause of general paresis. The responsibility for the prevention of the disease must rest with him who treated the patient in his early syphilitic life, for when he fell into the hands of the alienist or entered the asylum the damage was done, repair was impossible and death occurred within two to six years; or, if prolonged, a life worse than death to his family and friends was certain. We should try to extend in an appropriate manner a more general knowledge of syphilis to the public and should impress upon the syphilitic most emphatically the necessity of a carefully regulated treatment, and that he must carefully regulate his future life and habits so as to conserve his resources, and, above all, avoid anything tending to irritate or strain his nervous system.

Dr. Ravogli said that in the prevention of these late nervous manifestations of syphilis everything depended upon our early treatment of the patient. It was the physician who first saw the patient upon whom the reponsibility rested, and it was for that reason, the speaker said, that he had always been such a strong advocate of a more thorough and complete course of teaching venereal diseases in our medical schools.

Dr. Hyde said we could not be too careful in forecasting the future of syphilitic patients. Men who contracted syphilis (not innocently) usually belonged to a group who were inclined to commit excesses along other venereal lines. A comparatively small percentage of women suffered from these nervous consequences of syphilis. The same causes that produced the lesions in men existed in women, and that women were comparatively exempt from tabes and dementia paralytica the speaker thought was largely due to the fact that they led different lives and that in their case the contributory causes which were so common and potent in men were absent.

Dr. Pusey said the statistics of the insane did not indicate that the treatment of syphilis had any effect on the subsequent occurrence of these nervous manifestations. He did not make this assertion for the purpose of minimizing in the slightest degree the importance of thorough and prolonged anti-syphilitic treatment, but to exculpate the man whose patient contracted dementia paralytica or locomotor ataxia in spite of such treatment.

Dr. Burnside Foster, of St. Paul, agreed with Drs. Hyde and Pusey. We did not know why, in some instances, tabes and dementia paralytica followed syphilis, while in others, treated in precisely the same way, it did not.

THE TUBERCULIDES IN REFERENCE TO GENERAL TUBERCULOSIS.

By Dr. Augustus Ravogli, of Cincinnati. The speaker said that tuberculides as eruptions from tubercular origin are diffused eruptions of erythematous or nodular types, always in relation to other tubercular symptoms. The affections are usually spread over large surfaces of the body and have a tendency to resolution and involution, but always leave a perceptible scar. In many instances they tend to necrosis and ulceration. In their infiltrative elements tubercle bacilli have not yet been positively demonstrated, and, in consequence, it is doubtful whether they are of bacillary or toxinic origin; their existence in relation to tuberculosis cannot, however, be denied. Tuberculosis of the skin and tuberculides have many points of difference. While cutaneous tuberculosis is a local limited tubercular affection, tuberculide is a generalized affection, connected with general infectious tuberculosis.

CASE REPORTS.

Dr. Burnside Foster, of St. Paul, reported the following cases in detail: (1) Chronic persistent edema of the face. (2) Elephantiasis in a young girl following hemiplegia. (3) Elephantiasis following general dropsy. (4) Result of the injudicious use of the x-ray in treating acne of the face. (5) Mycosis fungoides, preliminary report.

KERATOSIS FOLLICULARIS RESULTING IN MULTIPLE EPITHELIOMA: REPORT OF A CASE.

By Dr. Grover William Wende, of Buffalo. The patient was a man thirty-seven years old, of medium height and spare build, who came under observation on Feb. 23, 1908. He had been working for seventeen years as clerk in a railroad office, and for five months in a foundry. The affection began at the age of seventeen upon the palms and soles. Five years later it appeared upon the corporeal surface, the lesions being like those of keratosis follicularis. At the age of twenty-seven the older lesions lost all similarity to that affection and gradually developed from the suspicion to the certainty of the three clinical varieties of epithelioma — superficial, deep-seated and papillary. Microscopical examination of the primary type showed thickening of the stratum corneum, with horny, pocket-shaped elongations originating in the inter-follicular and follicular tissue; there were also peculiar cell structures in the epidermis, the result of an anomalous type of cornification, agreeing with the so-called Darier pseudo-psorosperm bodies. In the larger lesions there was a gradual malignant transformation, with a final giving way of the basal membrane, the lowest epithelial cells proceeding downward, infiltrating the derma and developing into the various types of squamous-celled epithelioma. The Darier's bodies found in the primary lesions were also discovered in the various conditions of epithelioma.

Dr. Zeisler said that while he had not the slightest hesitation in accepting Dr. Wende's findings, and was convinced that the case was one of multiple keratosis that eventually developed into epithelioma, still he felt rather doubtful that it could properly be classed as one of keratosis follicularis. It differed from those cases of keratosis follicularis that he had seen and studied.

Dr. Hartzell said he was inclined to agree with Dr. Zeisler that there was some doubt as to its being a case of the keratosis follicularis of Darier. The picture of the hand and palm was very similar to lesions produced by the long-continued use of arsenic.

Dr. Hyde also referred to the resemblance of the palmar lesions to those of an arsenical keratosis.

The discussion was continued by Drs. Pollitzer and Schamberg.

Dr. Wende, in closing, said the possibility of this being an arsenical keratosis, to which Dr. Hyde and others had referred, was considered from the beginning. There was no history that the patient had ever taken arsenic. The clinical features in this case, the speaker said, did not correspond with the advanced stage of keratosis follicularis; the lesions had remained isolated, as in the early stages of the disease, and progressed slowly, accompanied by exacerbations, which correspond with many of the cases recorded and was a contingent of the affection.

The third day's session of the Association was held at the dispensary of the Johns Hopkins Hospital in Baltimore and was devoted to the exhibition and discussion of clinical cases. The cases were shown by Drs. Gilcrist, Carmicheal, Abercrombie, Schamberg, Stroebel and Haynes.

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Book Reviews.

Lectures on Diseases of the Nervous System. Third series. The Borderland of Epilepsy, Faints, Vagal Attacks, Vertigo, Migraine, Sleep Symptoms and their Treatment. By Sir William R. Gowers, M.D., F.R.C.P., F.R.S. 12mo. Pp. vi, 121. Philadelphia: P. Blakiston's Son & Co. 1907.

The lectures which make up this little volume have already been published for the most part in the *Lancet* and *British Medical Journal* They form an interesting study of various conditions, some of them obscure and little studied, in their relation to epilepsy. The author is disposed to attribute the loss of consciousness that attends syncope and epilepsy as due to a discontinuity of conduction at the junction of the neurons, an hypothesis still unproved, but the only one that in his opinion meets the case. By "vagal attack" he means prolonged seizures, the symptoms of which consist chiefly in disturbance of some of the functions of the pneumogastric, comprehending "subjective gastric, respiratory and cardiac discomfort, sometimes cardiac pain, and even a sense of impending death." When vasomotor spasm forms part of the attack, nitroglycerine is often of great service. Aural or labyrinthine vertigo is the only form that has resemblance to the epileptic attack. The direct relation of migraine to epilepsy is slight and the most frequent relation is as a source of error in diagnosis. The lectures touch upon many points neglected by the ordinary textbooks and afford much information as to conditions which may often be mistaken for and sometimes lead to true epilepsy.

Subcutaneous Hydrocarbon Protheses. By F. Strange Kolle, M.D., author of "The Recent Röntgen Discovery"; "The X-rays, Their Production and Application"; "Medico-Surgical Radiography," etc., etc. New York: The Grafton Press. 1908.

In his inevitable "foreword" Kolle informs us that "the object of the author has been to place before the profession a thoroughly practical and concise treatise on the subcutaneous employment of hydrocarbons for the correction of defects about the face, neck and shoulders. The importance of this particular branch of cosmetic surgery is at the present time undeniable." The book before us deals extensively and informingly of hydrocarbon prothesis. Doubtless the subject is important and the use of this method about the trunk and in the cavities of the body may be valuable, but in view of the hideously deforming paraffine tumors occasionally seen, who shall dare to put paraffine under the skin of the face?

A Textbook of Operative Surgery, Covering the Surgical Anatomy and Operative Technic involved in the Operations of General Surgery. Designed for Practitioners and Students. By Warren Stone Bickham, M.D., Phar.M., Junior Surgeon, Touro Hospital, New Orleans; late Surgeon to Manhattan State Hospital, New York; late Assistant Instructor in Operative Surgery, College of Physicians and Surgeons, New York, etc., etc. Third edition, greatly enlarged. Containing 854 illustrations. Philadelphia and London: W. B. Saunders Company. 1908.

The first edition of Bickham's valuable book was published in 1903. Now he provides us with more than two hundred additional pages and three hundred additional illustrations. In his preface he pays compliments to the various associates who have assisted him, and winds up with a well-deserved tribute to his eminent professional friend, Rudolph Matas.

No reviewer can sum up fully and faithfully a book of this nature. Within the space of twelve hundred pages the author describes all the operations of general surgery, as well as a great number of special operations, and with each operation he gives in brief and lucid paragraphs a description of the anatomy involved, of the landmarks, and of the results to be expected. As is inevitable in dealing with so vast a theme, he is not always up to date. For example, his illustration of Cushing's operation upon the Gasserian ganglion shows a method discarded by Cushing some three years ago. In spite of a few such minor lapses, however, the author has compiled a book of great immediate value, worthy to be consulted by every busy operating surgeon.

Oxford Medical Publications. Diets in Tuberculosis. Principles and Economics. By Noel Dean Bardswell, M.D., M.R.C.P., F.R.S. (Edin.), and John Ellis Chapman, M.R.C.S., L.R.C.P. *Rotunda Midwifery for Nurses and Midwives.* By G. T. Wrench, M.D., with introduction by the Master of the Rotunda Hospital. Illustrated. *The Law in General Practice. Some Chapters in Every-day Forensic Medicine.* By Stanley B. Atkinson, M.A., M.B., B.Sc. *Clinical Lectures and Addresses on Surgery.* By C. B. Lockwood. *Medical Lectures and Aphorisms.* By Samuel Gee, M.D. *Insurance and General Practice.* By E. M. Brockbank, M.D. (Vict.), F.R.C.P. *Diseases of the Eye.* By M. Stephen Mayou, F.R.C.S. Illustrated. *Glandular Enlargement and Other Diseases of the Lymphatic System.* By Arthur Edmands, M.B., M.S., B.Sc. (Lond.), F.R.C.S. Eng. Illustrated. London: Henry Frowde, Hodder & Stoughton. 1908.

This admirable series of small books on various subjects in the medical sciences has been enlarged by the addition of the foregoing eight volumes, which completely maintain the excellent standard set by the earlier publications in this series.

The volume on "Diets in Tuberculosis" is the result of a research made possible by a grant of the Royal Society for Scientific Investigation. The work described has extended over a number of years and gives in abstract form the important results of the investigations. With the increasing attention which is being given to diet and to its significance in various affections, this small volume of 184 pages will be received with satisfaction.

Dr. Wrench, late assistant master of the Rotunda Hospital, gives in the volume entitled "Rotunda Midwifery for Nurses and Midwives" an exposition of the practice at that great obstetrical hospital. Some of the illustrations are rather crude according to modern standards, but no doubt serve their purpose sufficiently well.

"The Law in General Practice" is contributed by Mr. Stanley B. Atkinson, and discusses in the manner which has been adopted by all of these volumes various everyday matters connected with forensic medicine.

"Clinical Lectures and Addresses on Surgery" is a small volume of 307 pages, and naturally discusses but a few conditions met with in ordinary practice. Among these are carcinoma of the breast, varicose veins, inguinal swellings, exploratory laparotomy and various matters concerning clinical reasoning, diagnosis and treatment.

A somewhat similar volume on medical subjects is that contributed by Dr. Samuel Gee, who writes particularly on certain affections of the chest and a few nervous conditions, and adds chapters in the form of essays on homeopathy, pharmacology, empiricism, a discussion of the conflict of medicine with smallpox, a sketch of Dr. Abraham Cowley, and a chapter of useful clinical aphorisms.

"Life Insurance and General Practice" by Dr. E. M. Brockbank takes up the medical examination of applicants for insurance, and goes into such detail as the modern methods of life assurance demand.

The volume on "Diseases of the Eye" is an excellent, brief discussion, put in a very practical way, of the common diseases, methods of refraction and other eye examinations. This is a valuable compendium for practitioners other than opthalmologists, and contains, as do most of these books, the sort of knowledge which every well-educated physician should possess.

The subject of "Glandular Enlargement and Other Diseases of the Lymphatic System" is rather in the form of a monograph on this subject and although devoid of references to the literature, will be found an admirable discussion of the great subject of affections of the lymphatic system, whether primary or secondary.

The series so far published has been an excellent résumé of medical knowledge and, as we said in our notice of earlier volumes, fills a very important place in the library, particularly of the special practitioner, whose knowledge of general medical progress is apt to grow hazy in his devotion to his special work.

The Sexual Question. A Scientific, Psychological, Hygienic and Sociological Study for the Cultured Classes. By August Forel, M.D., Ph.D., LL.D., formerly Professor of Psychiatry at, and Director of, the Insane Asylum in Zurich (Switzerland). English adaptation by C. F. Marshall, M.D., F.R.C.S., Late Assistant Surgeon to the Hospital for Diseases of the Skin, London. Illustrated. Pp. xv–536. New York: Rebman Company.

This is an important book from an authoritative source. Professor Forel's views, however radical, must always be received with attention and with the assurance that they proceed from much patient investigation, undertaken in a broad-minded spirit. The book, as its name suggests, is a plain statement of sexual matters as they relate to the individual and to society. Many other books have been written on the same subject, but few to our knowledge have approached it from the standpoint of such wide experience and in so comprehensive a fashion. The earlier chapters are taken up with a discussion of the mechanism of sexual relations, love, sexual pathology, prostitution and similar questions. A few brief statements under the heading "Americanism" will be read with interest, if not with complete sympathy, in this country. We question whether America differs widely from other equally civilized countries in the attributes to which attention is called in these paragraphs. The latter chapters of the volume, embodying Forel's views on sexual morality, the sexual question in politics and in political economy, the sexual question in pedagogy and the sexual question in art, will particularly appeal to the general reader and will undoubtedly excite very varying degrees of acceptance and in some quarters, we imagine, violent opposition. The influence of religion, Forel regards as, on the whole, pernicious. He insists on the relativity of morality and finds the following as the most practicable commandment on sexual morality: "Thou shalt do no harm willingly to any person, nor to humanity, by thy sexual appetite or acts, and thou shalt do thy utmost to promote the happiness of thy neighbor and the welfare of society." On the political side, Forel expects much from the free emancipation of women in elevating the social conscience and in establishing a wider normal relation between the sexes. The difficult question of the training of children in sexual matters should be read with care by those who have children of either or both sexes under their care. The perversion of art is regarded as a dangerous element in our civilization, as exemplified by the part eroticism plays in much of the so-called amusement of the public. The "danse du ventre," Forel regards as less likely to produce an erotic effect upon the spectators than "the décolleté costumes of society ladies." The book contains many such radical statements, which, whether accepted or not, should give much food for thought. A strong plea is made for the equality of the sexes in sexual relations and for anti-conceptional measures, where for any reason the social welfare would not be subserved by the procreation of children. The author's well-known attitude toward the alcohol problem repeatedly finds expression. It is quite impossible to do more than suggest the scope of this notable book, which, as was intended, should especially reach the eyes of the cultured classes.

The Practitioners' Visiting List, 1909. Philadelphia and New York: Lea & Febiger.

This well-known visiting list has as usual been revised and brought up to date. It has its established merits, and those who have used it before will wish to continue to do so; others cannot do better than to make its acquaintance.

A Textbook of Diseases of Women. By Charles B. Penrose, M.D., Ph.D, formerly Professor of Gynecology in the University of Pennsylvania, Surgeon to the Gynecean Hospital, Philadelphia. With 225 illustrations. Sixth edition, revised. Philadelphia and London: W. B. Saunders Company. 1908.

Comparing this edition page by page with the fifth edition, published in 1904, it appears that there are very few changes. The chapter on diseases of the vagina has been enlarged by two sections, and the Stolz operation for cystocele on page 90 has given place to the Dudley operation on the anterior wall. There are minor changes in the chapter on fibroid tumors and also in the chapters on genital fistulæ and diseases of the bladder and urethra. The illustrations are the same, except as noted, the pages are alike, the index is slightly larger; in every essential respect it is the fifth edition over again.

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HEALTH IN THE PHILIPPINES.

Careful medical observation has now been extended over the problems of health in the Philippine Islands for a sufficient time to make certain conclusions of value. In an article contributed to the September number of *Philippine Journal of Science*, William S. Washburn discusses the question of the health conditions in the islands in an illuminating way. It will not be questioned that one of the chief benefits which has resulted from American occupation has been the sanitary improvement which has been steadily going on from the first. In July, 1901, civil government in the Philippines succeeded the military government, and the health department remained under the charge of officers of the medical department of the army up to the spring of 1905. Since that time this department has been under the immediate direction of a medical officer of the United States Public Health and Marine-Hospital Service. It will be seen, therefore, that the civil government has had the continuous benefit of the training of men skilled in matters of public health and sanitation.

Certain statistics form a very striking commentary on the benefits resulting from such systematized medical administration of matters pertaining to the public health. For example, among American troops the death-rate in 1898 per thousand from typhoid fever was 7.58, with admissions numbering 68.21. In 1906 there were no deaths from typhoid and less than four per thousand admissions for the disease. The mortality from malarial fevers was less by more than half in 1906 than in 1899. Tuberculosis shows a very remarkable but somewhat less proportionate decrease. Diarrheal diseases have been reduced from 6.11 in 1899 to .4 deaths in 1906. Other statistics, though somewhat less striking than these, all point in the same direction, showing the striking effects of modern sanitary methods in combatting disease. The general record of of health would be very decidedly improved were it possible to control venereal disease. Naturally the closest isolation of infected soldiers solves but half the problem, the other half of which remains with the civil and not with the military authorities. Perhaps one of the most striking illustrations of the effect of proper sanitary measures has been the reduction of the mortality in Bilibid prison, which in 1905 was upwards of 100 per thousand of those confined there, whereas at the close of the year 1907 it had been reduced to 20 per thousand. It is interesting further to note that pneumonia has been epidemic in this institution.

Washburn draws attention, among many other matters of interest, to the health of the American teachers who have been distributed over the entire archipelago. Last year there were about eight hundred such American teachers in the islands, nearly one third of whom were women. Statistics then from the report of the Director of Education state that the general health of these teachers is excellent and that in general their health is as good there as at home, always providing that reasonable care is taken. In five years from 1902 to 1907, 60 teachers died in the Philippines or at home as a result of illness contracted in the islands. The later years show a decreasing number of deaths. For example, in 1907 there were 5, and in 1903, 16. This disparity is due both to the fact that the physical condition of the teachers was not thoroughly investigated in the earlier years and to the fact that the conditions of living were then less hygienic than at present. Smallpox and Asiatic cholera are no longer a menace, and the death-rate from pneumonia, influenza, diphtheria, typhoid, measles and scarlet fever is comparatively small. As in other countries, tuberculosis is the most important dangerous, communicable disease, one seventh of all deaths in Manila during the past year being due to this cause. The statement is made that tuberculosis is a far more serious menace in the Philippines than all the so-called tropical diseases combined, including cholera and plague. Similar educational methods are being pursued there as in this country as measures of prophylaxis. Diseases due to intestinal parasites are undoubtedly preventable if sufficient care in eating and drinking is exercised. It is not too much to anticipate that this source of danger will in the near future be entirely obviated, and if so, it will be almost as much of a boon to the tropics as the prevention of yellow fever. There has been no case of bubonic plague in the islands for nearly two years, which is of special interest in view of the fact that in India over a million are annually dying from the disease and many cases are being reported from the islands in the China Sea. The improvement in the smallpox situation since the introduction of vaccination is hardly less striking. In several provinces, where formerly thousands died annually, there has not been a single death. In all, three and a half millions have been vaccinated with no untoward results. The segregation of lepers is likely soon to solve the problem of that disease, and there is small danger of any great future dissemination.

These are some of the results of the campaign of education which has been going on since American occupation. Whatever civic benefits may have been conferred upon the population through the taking over of the islands by the United States, it is not to be questioned that sanitation has developed to a point where the menace of tropical disease has been reduced to a minimum, and the conditions of life, therefore, improved to a point impossible under native or Spanish rule.

THOREAU AS AN EXPONENT OF THE MODERN TREATMENT OF TUBERCULOSIS.

It not infrequently happens that a form of treatment which later acquires the dignity of scientific method is used at the outset in a wholly empirical way. Although perhaps not generally recognized, it appears that such was the case in the treatment of tuberculosis which has passed through many vicissitudes before reaching the common-sense stage which now prevails. We are informed by an interesting communication in the *Journal of the Outdoor Life* for this month, from the pen of Dr. James J. Walsh, that Thoreau practised what has since become a commonplace, namely, the outdoor treatment for pulmonary consumption. He died of this disease May 6, 1862, at the early age of forty-five. At that time his death was regarded as directly due to his exposure to the open air and his disregard for cold. From this habit he was supposed to have "caught a cold" which "settled on his lungs," whence the origin of the disease from which he died. Forty-six years after the event, we are inclined to think that had Thoreau not braved the criticism of his friends and lived in the open, he would much earlier have succumbed and we should have lost much of the somewhat unique type of literature which has become so intimately associated with his name. It is not possible for us to determine how far Thoreau was led by an instinct of self-preservation, or how far his natural inclination induced him to seek the out-of-door life, but the interesting fact remains that in spite of the protests of his friends he carried out in most complete fashion the modern treatment for tuberculosis and undoubtedly thereby added many years to his life, not to speak of the pleasure he derived from his then original idea. The coincidence is suggestive that out of this experiment has developed a literature which no doubt has played a significant part in the shaping of our modern scientific methods.

MEDICAL NOTES.

A Centenarian. — It is reported that Mrs. Harriet Armstrong has died at Roanoke, Va., at the age of one hundred and one years. She had lived her entire life in one place.

Deaths. — The death of Professor Rindfleisch, for upwards of thirty years professor of pathology at the University of Würzburg, Germany, is announced. Rindfleisch succeeded Virchow in this chair. The death is also announced of Dr. Charles E. Beevor, of London, a neurologist of wide reputation, who died suddenly on Dec. 5. An obituary notice of Dr. Beevor will be published later.

A Table for Women at the Naples Zoölogical Station. — A table for women has been founded at the well-known zoölogical station at Naples, an institution which has been in active operation since 1872. A number of prominent colleges for women, or to which women are admitted, in this country, have united to maintain this table for the purpose of stimulating laboratory research by women.

Typhoid Fever in Pennsylvania. — According to the *Medical Record*, a serious epidemic of typhoid fever has been reported from Reading, Pa., where over four hundred persons are said to be ill of the disease. The State Board of Health has been called upon to aid in overcoming the epidemic, which is thought to be due entirely to the unfiltered and unwholesome water furnished to the city from Maiden Creek.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Dec. 15, 1908, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 89, scarlatina 49, typhoid fever 18, measles 21, smallpox 0, tuberculosis 39.

The death-rate of the reported deaths for the week ending Dec. 15, 1908, was 20.11.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Dec. 19, 1908, was 247, against 283 the corresponding week of last year, showing a decrease of 36 deaths and making the death-rate for the week 20.87. Of this number 132 were males and 115 were females; 242 were white and 5 colored; 158 were born in the United States, 86 in foreign countries and 3 unknown; 48 were of American parentage, 169 of foreign parentage and 30 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 89 cases and 5 deaths; scarlatina, 41 cases and 3 deaths; typhoid fever, 27 cases and 1 death; measles, 20 cases and 4 deaths; tuberculosis, 42 cases and 24 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 42, whooping cough 2, heart disease 29, bronchitis 9 and marasmus 5. There were 13 deaths from violent causes. The number of children who died under one year was 62; the number under five years 83. The number of persons who died over sixty years of age was 64. The deaths in public institutions were 83.

Cerebrospinal meningitis, 1 case and 3 deaths.

Deducting deaths of non-residents, the total is 220. The corrected death-rate is then 18.59.

Instruction to Teachers Regarding Tuberculosis. — Under the auspices of the Cambridge, Mass., Anti-Tuberculosis Association, Dr. Eugene A. Darling, its president, last week addressed six hundred school teachers of that city on methods of prophylaxis. This is the first of a number of talks to teachers which are designed to be purely in the nature of prevention of the disease rather than of its treatment.

Reporting of Cases of Tuberculosis. — The Boston Board of Health has found it necessary to call the attention of physicians to the law regarding the reporting of cases of tuberculosis. A second personal appeal has been sent out in the hope that it may not be necessary to resort to the courts to secure a full compliance with the law in the reporting of contagious diseases.

Report of Department of School Hygiene. — The report of the Department of School Hygiene of the Boston public schools has been issued as a city document from the pen of the director, Dr. Thomas F. Harrington. In this pamphlet Dr. Harrington discusses in considerable detail the various problems which have arisen regarding the hygiene of schools regarded from the broadest standpoint. He points out the lack of systematic physical training in our public schools and suggests improvements in this regard. The subjects of school athletics, playgrounds, sanitation, light, seating, medical inspection, are some of the topics discussed. A special report on schoolyard playgrounds will be read with interest.

NEW YORK.

Meeting of Nu Sigma Nu Fraternity. — The medical fraternity, Nu Sigma Nu, held its fifth annual dinner at the Hotel Manhattan on Dec. 12, and among the speakers were Drs. Thomas Darlington, W. Gilman Thompson and J. Ralph Jacoby.

Sentence for Illegal Selling of Cocaine. — Paul G. Edwards, who the week previous was convicted of selling cocaine to a negro, was sentenced on Dec. 18 by Judge Crain, in the Court of General Sessions, to serve five months in the penetentiary and to pay a fine of $100.

St. Gabriel Sanatorium. — Two thousand dollars was recently realized at a bazaar held at the Waldorf-Astoria for the St. Gabriel Sanatorium in the Adirondacks, and $4,000 at an entertainment with Japanese historical tableaux at the Plaza Hotel, for the benefit of the orthopedic ward at the New York Post-Graduate Hospital.

New Building for Hebrew Infant Asylum. — Ground has just been broken at Kingsbridge Road and 193d Street, Manhattan, for the Hebrew Infant Asylum, now located in the Bronx, in quarters which it has outgrown. The new buildings, which will include special facilities for isolation in case of the appearance of contagious disease, will accommodate 350 inmates and are to cost $500,000.

Chlorine Gas in Water Purification. — In the suit, now pending, of Jersey City against the East Jersey Water Company, to compel the company to live up to its contract to supply the city with pure water, it has developed that the water company is employing chlorine gas as a means of purification. Its contention is that even though the water may be polluted when it reaches the reservoir near Boonton, which is used for storage, it is pure when it leaves the reservoir for distribution, and this defense is based on a series of experiments which it has been making with chlorine. It is asserted that the gas, when infused into a body of water, has the effect of destroying all microbic life while leaving no trace of itself afterward; and it is furthermore stated that experts in the employ of New York City who have investigated this purification system have been so impressed with its success that they have recommended its adoption for the great Ashokan reservoir now in process of construction.

The Emmanuel Movement. —The "Emmanuel movement" has attracted considerable attention of late in New York. A number of lectures on the subject have been given, clinics have been started, and it has been discussed in gatherings of various kinds. At a recent meeting of Congregational ministers where it was the topic of the evening, Dr. William Hanna Thomson, ex-president of the New York Academy of Medicine, was one of the speakers and is reported as saying in the course of his remarks: "Dr. Worcester is behind the times a little in his medical knowledge. If you introduce his healing practices in your churches you will constantly come in conflict with physicians. There will be ignorant neurologists and unworthy healers. I know from experience how easy it is for abuses to spring up." Dr. Thomson, himself the son of a prominent clergyman and missionary, is as well known in religious as in medical circles, having for many years conducted the largest and most successful Bible class ever held in New York.

New Jersey Day at Tuberculosis Exhibition. — Dec. 17 was New Jersey Day at the International Tuberculosis Exhibition, and Governor Fort of that state made an address at the meeting at the American Museum of Natural History held in connection with it. Another of the speakers was the Right Rev. James A. McFaul, Roman Catholic Bishop of Trenton, who expressed his gratification that the fight against tuberculosis had at last become concrete; referring particularly to the fact that Archbishop Ryan, of Philadelphia, had recently given instructions that the educational crusade against the "White Plague" should be carried on in all the elementary schools, as well as all the higher institutions of learning, in his diocese. "The result of the movement thus begun," said Bishop McFaul, "will be to enlist the services of 16,000 clergymen in 13,000 parishes in the United States, and the education of 1,250,000 Catholic school children in this respect. The general effect will be that 17,000 000 Catholics in the United States will be enabled to lend their help in preventing the spread of the terrible scourge of consumption."

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Current Literature.

Medical Record.

Oct. 31, 1908.

1. *Calmette, A. *Intestinal Infection and Immunity in Tuberculosis.*
2. *Gould, G. M. *The Myth and the Mystery of "Menière's Disease."*
3. *Clark, L. P., and Scripture, E. W. *The Epileptic Voice Sign.*
4. Westbrook, R. W. *What Factors are Necessary in Addition to Asepsis to Secure Healing by Primary Union?*
5. Heiser, V. C. *Preliminary Notes on a Case of Leprosy apparently Cured by X-Rays.*

1. Calmette presents arguments in favor of the intestinal mode of infection in tuberculosis. He cites the many failures of investigators to produce experimentally infection of the lung by inhalation and the artificial conditions surrounding the successful efforts. He considers the anatomic protection of the lung against respiratory infection, and gives evidence to show that the lesions of the trachial and bronchial glands are not convincing arguments for the respiratory method of infection. He states that though he believes that the intestine is the most frequent source of tuberculosis, he does not imply that food plays the essential rôle, for the chance of infection in other ways is so great (by scattering of sputum by the cough on the food and other objects which are placed in the mouth, direct contact of the lips, hands, soiled objects and flies). He cites many experiments which have proved the ability of the tubercle bacillus to penetrate the intestinal wall and enter into the blood or lymphatic circulation, to be carried about the body for a greater or less time before they produce the lesions characteristic of the tuberculous infection. He discusses at length the production of immunity against the disease.

2. The author presents a long article to prove that Menière's disease is nothing more or less than migraine, and that eye strain is at the bottom of most cases.

3. Clark and Scripture find distinct differences in the voice of epileptics from the voice of normal people, which they can demonstrate on "tracings." They believe that this method will be of diagnostic importance. [W. B. R.]

New York Medical Journal.

Dec. 5, 1908.

1. Karpas, M. J. *Contribution to Our Knowledge of the Etiology of Dementia Precox.*
2. Torek, F. *Peritonitis Due to Appendicitis.*
3. Jenkins, W. T. *Cholera and Commerce.*
4. Minor, J. L. *Restoration of Sight after Nearly a Month's Blindness from Glaucoma.*
5. Gray, A. L. *The Value of the X-Rays in Chest Diagnosis.*
6. *Karsner, H. T. *Congenital Nephritis.*
7. Strauss, I. *Report of a Glioma of the Brain involving the Pia Mater.*
8. Fox, C. D. *Late Report of a Case of Fracture and Dislocation of the Second Cervical Vertebra.*

6. Karsner reports a case of acute parenchymatous nephritis in an infant who died forty-five minutes after birth (a few minutes after the cord was cut). Autopsy showed nothing which could have caused the nephritis, and the mother was healthy in every respect. The writer believes that there must have been some obscure nephric irritant in the fetal circulation. [L. D. C.]

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

DEC. 5, 1908.

1. HAMILTON, A. M. *Treatment of Locomotor Ataxia.*
2. SNOW, I. M. *Curative Effect of Rest in Children with Persistent Loss of Appetite.*
3. MARVEL, P. *Hyperpyrexia in Children. Its Cause and Treatment.*
4. VALENTINE, F. C., AND TOWNSEND, T. M. *Presumably Cured Gonorrhea and Marriage.*
5. *HARRIS, F. G., AND CORBUS, B. C. *The Clinical Value of Spirocheta Pallida in the Diagnosis and Treatment of Syphilis.*
6. RHEIN, J. H. W. *Cerebellar Symptoms in Hydrocephalus; with a Pathologic Report of a Case Associated with Syringomyelia.*
7. WENDE, G. W. *Erythema Figuratum Perstans.*
8. PYLE, W. L. *Unilateral Voluntary Nystagmus. With Report of a Case.*
9. BACHELOR, J. M. *Fracture of Patella, with Skiagrams of Results of Treatment by Suture.*
10. *FAIRBANKS, A. W. *General Paresis in Childhood.*
11. KLOTZ, H. G. *Mercurial Treatment for the Late Manifestations of Syphilis.*
12. BOOT, G. W. *Non-Suppurative Involvement of the Labyrinth in the Course of Mumps.*
13. *LITZENBERG, J. C., AND WHITE, S. M. *Hemorrhage of the Adrenals in Infants. With Report of Two Cases not due to Infection.*
14. *EDSALL, D. L. *A Disorder due to Exposure to Intense Heat.*

5. Harris and Corbus describe the "dark ground" illumination for studying the spirocheta pallida and show how easily it is demonstrated in early lesions. They believe that after demonstrating the organism in a primary lesion it is not only unnecessary but harmful to wait for secondary manifestations. The most logical therapy is excision of the chancre when possible, and in all cases the immediate institution of rigorous antisyphilitic treatment.

10. Fairbanks describes general paresis in children. He states that it invariably occurs before the fifteenth year, is equally divided between boys and girls, the course is longer in the child than in the adult, the onset is characterized first by mental deterioration, followed by tremor, disturbances in gait, change in reflexes, etc., the most marked being the muscular instability. The course is steadily progressive, lasting from one to nine years. The only other condition with which it is compared is cerebral syphilis. He believes that syphilis is beyond doubt the etiologic factor.

13. Litzenberg and White report two cases of adrenal hemorrhage in infants and state that suprarenal hemorrhage is more common than hemorrhage from the other viscera. It is due principally to the close relation of the adrenals to the vena cava, making congestion easy. The bleeding always follows active or passive congestion, which may be caused by difficult labors, obstetric operations or thrombosis. Active congestion is caused by infection. The finding of the pneumobacillus of Friedländer in the two cases reported, and other bacteria in five other cases, proves the infective etiology.

14. Edsall reports two very interesting cases of fibrillary contractions and tonic spasms of the muscles of the legs, arms and abdomen, due to exposure to intense heat. There is marked hyperexcitability of the muscles, especially on attempts at movement. The muscular contractions are accompanied by intense pain. He supposes the condition to be due to an acute degenerative process in the muscles. [E. H. R.]

DEC. 12, 1908.

1. SOLLMANN, T. *The Pharmacopœia as the Standard for Medical Prescribing.*
2. ANDERS, J. M. *The Need of More Intimate Knowledge of the United States Pharmacopœia and the National Formulary among Physicians.*
3. WILEY, H. W., AND KEBLER, L. F. *The Pharmacopœia as a Legal Standard.*
4. WAHRER, C. F. *Responsibility of the Medical Profession for the Use of Nostrums.*
5. HEIDINGSFELD, M. L. *A Further Contribution to the Histopathology of Paraffin Prosthesis.*
6. *RAVOGLI, A. *The Relation of the Character of the Syphilitic Initial Lesion to the Secondary Constitutional Period.*
7. *BREAKEY, J. F. *The Influence of the Discovery of the Spirocheta Pallida on the Treatment of Syphilis.*
8. *CRILE, G. W. *Hemolysis with Special Reference to Cancer and Tuberculosis. Further Observations on its Clinical Aspects.*
9. GEHRING, E. W. *The Value of a Routine Physical Examination.*
10. FRY, H. D. *A Plea for the Prompt Evacuation of the Uterus in the Treatment of Eclampsia.*
11. *RAVENEL, M. P. *Mixed Infections in Tuberculosis.*
12. CHAPIN, C. V. *Air Infection of Minor Importance.*
13. HURTY, J. N. *Uniformity of Vital Statistics.*
14. GOODMAN, E. H., AND STERN, S. *A New Method for the Quantitative Estimation of Albumen in Urine.*

6. Ravogli in discussing syphilis states that on the enfeebled condition of the constitution, the inability of the system to produce antibodies and the passive condition of the leucocytes depends the malignancy of syphilis. It is not the virulence of the syphilitic organism, but the lessened resistance of the body that determines the malignancy. He speaks of atoxyl as a new drug which has been successfully used.

7. Breakey believes that atoxyl is a remedy that promises well in the absorption treatment of syphilis, and recommends a dose of 50 cgm. given hypodermically at intervals of one or two days and repeated from four to eight or ten times, after which an interval of rest should be observed, or mercury or iodine substituted.

8. Crile describes the technic of hemolysis in cancer and tuberculous cases and concludes that hemolysis occurs in a number of diseases, the greatest frequency being in cancer and tuberculosis. From the clinical standpoint it offers additional evidence in the diagnosis of cancer and tuberculosis.

11. Ravenel believes that evidence justifies the conclusion that mixed infections in tuberculosis injuriously modify the disease, are the causative factors in some of the great accidents of this disease or aid in their production and tend to shorten life, and in some cases are the direct and immediate cause of death. [E. R. H.]

ANNALS OF SURGERY.

DECEMBER, 1908.

1. *GRAY, H. T. *Invagination of Meckel's Diverticulum.*
2. DOWD, C. N. *Peritonitis in Children from Unknown Sites of Infection.*
3. FOWLER, R. H. *Diffuse Septic Peritonitis due to Appendicitis.*
4. TURCK, R. C. *The Interlocking Suture.*
5. ELDER, J. M. *Primary Sarcoma of the Peritoneum.*
6. *LEE, H. M. *Gunshot Wound of Abdomen, involving the Stomach and Jejunum, Complicated with Pregnancy.*
7. GOODRICH, C. H. *Appendicitis and Tetany.*
8. *SCUDDER, C. L., AND DAVIS, L. *Harrington's Operation of Intraperitoneal Cystotomy.*
9. MOSCHCOWITZ, A. V. *Simultaneous Ligation of Both External Iliac Arteries for Secondary Hemorrhage following Bilateral Ureterolithotomy.*
10. *HAGNER, F. R. *A Further Report of the Operative Treatment of Acute Gonorrheal Epididymitis.*
11. *MATHEWS, F. S. *Finger Enucleation of the Tonsil.*
12. *BREWER, G. E., AND WOOD, F. C. *Blastomycosis of the Spine.*
13. *HUBBARD, J. C. *Arteriovenous Anastomosis for Gangrene.*
14. WAINWRIGHT, J. M. *A Modification of the Gritti Amputation, with Special Reference to Nerve Blocking and Regional Anesthesia.*
15. HABHEGGER, C. J. *Skin Grafting of the Heel by Means of a Flap from the Opposite Thigh.*
16. ALDEN, E. *Some Deformities of the Hand.*
17. *HARRIGAN, A. H. *Fracture of the Os Magnum.*

1. Gray collects from the literature 39 cases of intussusception associated with Meckel's diverticulum, to

which he adds one of his own experience. In 6 of these 40 cases the diverticulum alone was invaginated. There is a preponderating occurrence among males, and between the second and fifteenth years. Gray believes that the condition presents a definite clinical picture, characterized by a history of previous non-inflammatory abdominal crises; by onset of final attack during activity, with maximum pain in region of umbilicus, which is apt to show slight elevation or other cicatricial abnormality; by absence of blood from stools; by remissions during attack, so that patient's condition is often better than in intestinal obstruction from other causes of like duration. The treatment is always operative. Reduction of the invagination alone has given the lowest mortality (25%). Gray, however, advocates intestinal resection and anastomosis, though the mortality from this procedure is 53%. There is an ample bibliography.

6. Lee reports a gunshot wound of the epigastrium in a woman seven months pregnant. At operation, sixteen hours after injury, active peritonitis was found. Three perforated wounds in the jejunum and one in the stomach were closed by suture, the peritoneum thoroughly irrigated and drained. The bullet was not found. Convalescence was uneventful and the patient delivered of a healthy living child at term.

8. The writers report four cases in which Harrington's method of intraperitoneal cystotomy (originally described in 1893 in the *Annals of Surgery*, vol. xviii, p. 408) was successfully employed, and strongly advocate its use in operation for bladder tumors not easily accessible by the suprapubic route and for those requiring removal of the whole thickness of the bladder wall. There are excellent figures illustrating specimens and the technic of the procedure, which is carefully described.

10. Hagner records a series of twenty-one cases of acute gonorrheal epididymitis treated by incision, multiple puncture of the epididymis and drainage. In all but one of these cases there was marked relief of pain, immediate and permanent fall of fever and leucocytosis and rapid resolution of the indurated inflammatory area. The average duration of convalescence was five days. In no case was there recurrence of the epididymitis or atrophy of the testis. The author recommends this procedure only in severe cases.

11. As a rapid, safe and efficient method of tonsillectomy in children, Mathews describes the procedure of digital enucleation, to which may be added removal of adenoids with a curette, if necessary. He maintains that with a little practice the entire operation may be done in two minutes under primary anesthesia, and believes it preferable to all others.

12. The writers report a case of blastomycosis of the spine, symptomatized by pain and stiffness in the back, of three months' duration, and by the formation of an elastic mass over the spine. Diagnosis was made by examination of fluid aspirated from this tumor. There is accurate description of the morphologic and cultural characteristics of the organism and of the operations which resulted in cure of this lesion and of another focus of infection that appeared later.

13. Hubbard reports his third case of arteriovenous anastomosis for gangrene. The foot, previously cool, became warm, and the necrotic process became stationary for a month, when sudden edema and increasing gangrene appeared and death followed. Examination showed at the site of anastomosis a thrombus, presumably formed at the time of recurrence of symptoms.

17. Harrigan collects from the literature five authentic cases of fracture of the os magnum and reports one of his own observation. The injury may be produced by direct or indirect violence, causing forcible flexion of the wrist. Operative treatment is not suggested. [R. M. G.]

Deutsche Medizinische Wochenschrift. No. 46. Nov. 12, 1908.

1. Treupel, G. *The Influence of Exercise and Habit on the Course of Reflex and Automatic Processes.*
2. *Jacobsohn, L. *The Finger-Bending Reflex.*
3. Rodenwaldt. *The Effect of the Strong Electric Current on the Animal Body.*
4. *Seeligmann, L. *The Employment of the Bier Passive Congestion and Suction Method in Gynecology by Means of a Simple Apparatus constructed for this Purpose.*
5. Römer, P. *Specific or Non-Specific Serum in Pneumococcus Infection of the Human Eye (Ulcus serpens)?*
6. Pincus. *Essential Hematuria.*
7. *Wechselmann. *Traumatic Alopecia.*

2. Jacobsohn describes a reflex of the fingers which is similar to the Babinski plantar reflex of the foot. With the hand extended easily and resting with its flexor surface upward on one hand of the examiner, the latter taps on the flexor tendons just over the lower end of the radius. The fingers bend, especially the terminal parts, if the reflex is positive; if negative, there is practically no motion of the fingers. This reflex is especially constant in spastic paralyses of the upper extremities. Also in many conditions which give a positive Babinski reflex.

4. As it is impossible to obtain passive hyperemia by constriction on the female genital tract, the suction method for producing the same effect has been introduced. Seeligmann offers a new and simple device which is very effective and can be employed without the aid of an assistant. He has used his suction method along with other treatment in many cases and, without giving too little credit to the other part of the treatment, thinks the suction is of value. He thinks this treatment especially useful in localized inflammation, chronic metritis and, with scarification, in amenorrhea and dysmenorrhea.

7. Wechselmann concludes a paper in which he cites many examples and mentions other theories with the opinion that alopecia areata is often caused by injury to the head and that as a result of this injury there exists an anatomic and functional lesion of the nervous tissue. Also arterial disease causing changes in the blood supply plays an important rôle, as hair is very dependent upon its blood supply for nutrition, it being so isolated from other supplies in case its own fails. Finally, psychical trauma, especially fright, plays an important part in the causation of localized baldness. [C. F., Jr.]

Münchener Medizinische Wochenschrift. No. 46. Nov. 17, 1908.

1. Anton, G. *Dementia Choreo-asthenica with Juvenile Nodular Hyperplasia of the Liver.*
2. Zieler, K. *The Use of Strong Mixtures of Mercury in the Treatment of Syphilis.*
3. *z Verth. *Narcosis, with Artificial Limitation of the Circulation.*
4. *Haenisch, G. F. *A Common but Apparently Hitherto Unknown Disease of Individual Bones in Children.*
5. Grasmann, M. *Two Cases of Stab Wound of the Right Ventricle; Cardiac Suture.*
6. Bruegel. *Ruminatio Humana.*
7. Lustig, A. A. *A Case of Raynaud's Disease.*
8. Hellwig. *A Contribution to the Knowledge of Hirschsprung's Disease.*
9. Federschmidt. *Occurrence of Cervical Fractures.*
10. Jaeger, H. *A New Treatment of Appendicitis.* (Preliminary communication.)
11. Käppeli. *Abortive Pneumonias.*
12. Rühl, K. *Abortive Pneumonia.*
13. Hufnagel, V. *Exophthalmic Goiter following Tuberculosis.*
14. Ranke, A. *The Present Status of the Histopathology of the Cerebral Cortex.* (Conclusion.)

3. Verth limited the quantity of blood in actual circulation by Esmarch bandages applied as tourniquets around the thighs, with sufficient pressure to shut off the circulation entirely. The anesthetic was then administered. He concludes from a series of one hundred surgical cases so treated that less of the anesthetic was needed to produce and to maintain narcosis and that the patients regained consciousness more quickly after the operation. No untoward effects were seen. He believes that if the respiration should fail during an operation, the blood from the legs could be released and that its contained CO_2 would immediately stimulate the respiratory center. He had no opportunity to observe this in practice. The arms were not bandaged for fear of injury to nerves.

4. The writer reports a case of a peculiar disease of the

navicular bone demonstrated by the x-ray. He believes the case to be identical with those described as a new disease by Köhler in No. 37 of this weekly. Pathologically, he thinks the disease is an imperfect development of the primary ossification center resulting from trauma. This hypothesis is explained by the fact that the navicular is the last of the bones of the foot to begin ossification.
[G. C. S.]

Berliner Klinische Wochenschrift. No. 43.
Oct. 26, 1908.

1. Halberstaedter, L., Müller, E., and Reiche, A. *Complement Fixation in Hereditary Syphilis, Scarlet Fever and Other Infectious Diseases.*
2. Dietrich, A. *Coincidence of Congenital and Acquired Heart Lesions.*
3. Engel, H. *Blood Pressure and Its Estimation in Chronic Nephritis.*
4. Schanz, A. *Insufficiency of the Spine and Scoliosis.*
5. Schwersenski, G. *Allosan.*
6. Fibiger, J., and Jensen, C. O. *Tuberculosis and Tubercle Bacilli in Men and Cattle.* (Continuation.)
7. Neminy, J. *Elementary and Colloidal Sulphur (Sulfidal).*

Deutsche Zeitschrift für Chirurgie.
Bd. 93. Heft. 1–6. April–July, 1908.

1. *Borchard. *The Question of the Conservative Methods of Operation in the Sarcomata of the Long Bones.*
2. Blecher. *Injury of the Median Nerve as a Complication of Typical Radial Fracture.*
3. Baetzner, W. *The Treatment of Gonorrheal Arthritis of the Large Joints by Means of Passive Hyperemia.*
4. Thelemann. *Contribution to the Subject of Postoperative Gastro-Intestinal Hemorrhages.*
5. Lotsch. *Subcutaneous Splenic Rupture and Its Treatment.*
6. Liek, E. *Experimental Research on Collateral Circulation of the Kidney.*
7. Ritter, C. *The Diagnosis of Echinococcus of the Bones.*
8. Burkhardt, L. *Investigations on the Action of Pure Oxygen on Wounds and Infections.*
9. Schmidt, E. *The Origin of a Common Ileocolic Mesentery.*
10. *Ohly, A. *Dislocation of the Semilunar Bone. Pathologic Anatomy and Operative Replacement of the Same.*
11. Reismann. *Dislocation of the Os Calcis, or Subcalcanean Dislocation of the Foot?*
12. Martini, E. *A New Apparatus for Fractures of the Femur.*
13. *König, F. *Further Experiences in Repair of the Jaw at Exarticulation of the Mandible.*
14. Malis, J. *The Cutaneous Diagnosis of Tuberculosis in Surgical Lesions.*
15. Sievers, R. *A Case of Embolism of the Pulmonary Artery Operated after the Method of Trendelenburg.*
16. Weber, F. *Appendicitis and Pregnancy.*
17. Flörcken, H. *Recurrence of Biliary Concretions about Sutures after Gallstone Operations.*
18. Wilms. *The Technic of Pelvic Compression at Operation for Extrophy of the Bladder according to Trendelenburg.*
19. Wilms. *Book Notices.*
20. *Wilms. *A New Method of Prostatectomy.*
21. Milner, R. *Historic and Critical Review of Bone Cysts, Chondromata, Fibrous Osteitis and Similar Affections.*
22. *Vorckler, T. *A Rare Form of Internal Intestinal Incarceration.*
23. Martini, E. *A New Apparatus for the Treatment of Fractures of the Arm.*
24. Iselin, H. *Tetany of Young Rats after Parathyroidectomy. Exaltation of the Tetanic Reaction-Capacity of Young Rats in the Posterity of Parathyroidectomized Rats.*
25. Blecher. *The Treatment of Acute Inflammatory Diseases with Artificial Hyperemia (on the Basis of Five Hundred Cases).*
26. Dreifuss, A. *Contributions to Pancreatic Surgery.*
27. v. Félegyházi, E. *Contributions to the Explanation of the Method of Action of Bier's Stasis in the Granulation Tissue of Fistulous, Fungous Foci.*
28. Hagenbach, E. *Symmetric Lymphangioma of the Oral Salivary Glands.*
29. Iselin, H. *Arrest of Growth in Consequence of Parathyroidectomy in Rats. A Contribution to the Knowledge of Parathyroid Function in Young Rats.* (Preliminary communication.)
30. Kirchner, A. *Dislocation of the Os Calcis or Subcalcanean Dislocation of the Foot?*
31. *Igelstein, L. *Pseudofractures of the Sesamoid Bones of the First Metatarsophalangeal Articulation.*
32. Kempf, F. *The Mechanism of Rupture of the Bladder under the Action of Abdominal Pressure.*
33. Wyss, M. O. *The Origin of Primary Carcinoma.*
34. Payr, E. *Memorial to Dr. Aldo Martina.*

1. After careful review of the more recent conservative methods in the operative treatment of sarcoma of the long bones, and consideration of a number of illustrative cases, Borchard expresses his opinion that radical amputative surgery in these conditions should be the exception, not the rule. He points out that the malignancy of such tumors is relative, and depends less on their cellular constitution than on the degree of involvement of soft parts. Excision of the growth, with resection of the bone in continuity, and plastic bone transplantation, or prosthesis, he believes offers as good a prospect of cure and a better one of functional efficiency than do the customary mutilating procedures.

10. Ohly collects from the literature seventy-five cases of dislocation of the semilunar and adds to them two of his own observation, one seen immediately and one forty-five days after occurrence of the injury. In both reduction was obtained by taxis through an open incision, a procedure which he considers preferable to excision of the bone in cases in which ordinary manipulation fails. He points out that reduction may be facilitated by regard to the capsular rent through which dislocation took place. This tear, which is generally longitudinal and opens the midcarpal joint between the cuneiform and the os magnum, should be closed by suture after replacement of the semilunar. The functional prognosis is excellent.

13. König reports favorable results from the use of Roloff's modification of the Martin-Schröder apparatus for immediate prosthesis after resection of the lower jaw with exarticulation. He believes hard rubber a better material than metal for such apparatus in cases where there remain teeth to which it may be secured. When there are no teeth, he prefers to use a prosthesis of ivory, and presents, with photographs of patient and apparatus, a case in which such a prosthesis healed into the wound by first intention without fistula, and furnished a jaw without deformity and functionally efficient until death, six months later, from heart disease.

20. Wilms describes a method of prostatectomy through a single linear incision opposite the left descending pubic ramus. The ischio-cavernosus muscle and the internal pudic vessels are retracted toward the median line, and, with a catheter in the urethra as a guide, the prostatic capsule is incised and the left lobe enucleated by the finger, which is then carried anteriorly and removes the right lobe through the same incision. The advantages of this method he believes to be ease, speed, minimum of bleeding, rapidity of healing, and impossibility of injury to the rectum.

22. Vorckler records a case of intestinal obstruction from strangulation of a loop of bowel by a Fallopian tube adherent to an ovarian dermoid. He is able to find only three similar cases in the literature.

31. After a careful review of the embryology, anatomy, and physiology of the sesamoid bones of the great toe, Igelstein collects from the literature four cases of injury to the internal sesamoid, to which he adds a unique personal observation of injury to the external sesamoid. These injuries he believes to have been not fracture, but a congenital division of the bone plus a neuralgia of the digital nerve from pressure by the traumatically displaced divisions, a condition to which he gives the term of "pseudofracture." The author ingeniously defends his view and seems to have proved a relatively unimportant point.
[R. M. G.]

Correspondence.

LONDON LETTER.

[*From our Special Correspondent.*]

Fashion in Therapeutics. Anaphylaxis. Wassermann Reaction. Preservation of the Appendix Vermiformis. Traumatic Rupture of the Intestine. Dr. Charles Beevor.

London, Dec. 11, 1908.

Mr. Editor: It is an interesting speculation how far a novel method of treatment is indebted to the glamor of its newness for the notable successes attending the period immediately following its introduction. A colleague was recently telling me of an old Paris physician who actually induced many anemic women to go regularly to the abattoirs and drink a pint of fresh blood. His treatment had a sound basis in therapeutic rationality, and he triumphed over an imperfect pharmaceutical *finesse* by an appeal to the amiable weakness that delights in all that is novel, even if it be bizarre; even if, as in this instance, it be revolting. The therapeutic fashion of the day is "sour milk" or "lactic acid milk"; the dairies bombard us with notices of the care and exactitude with which they prepare and distribute treated milk at physicians' orders. The plan has a great vogue, and one hears on all sides of the beneficial results obtained. These are by no means limited to cases of intestinal fermentation or constipation; the mystical properties of the old pharmacopœial "alteratives" are re-embodied in the lactic acid bacillus and it is in danger of becoming a panacea. The only wonderful results associated with the treatment that have come to my knowledge are in osteo-arthritis. Cases of severe progressive polyarticular disease have not only become arrested, but have improved with celerity beyond all possible anticipation; pain has vanished; swellings and thickenings have diminished; movement has been restored. How much of this is due to the cessation of intestinal intoxication, how much to the ensuing release of recuperative energy, how much to a new sense of well-being, how much to suggestion, how much to coincidence?

For some remedies the span of popularity and term of success is the nine days of wonderment. Others die a too-early death by misadventure. Therapeutics suffered a serious loss when transfusion of blood was stopped in consequence of anomalous results due to an imperfect knowledge of the conditions of hemolysis. Just now there is a danger of the valuable work that has been done on vaccines being robbed of its due fruition by the anaphylaxis scare. It is not only the matter of Nicolle's work on anaphylaxis in association with glanders and mallein or the B. Mallei; other disquieting bits of evidence crop up now and then. A coroner's inquest was held not long since on a case of death shortly after an injection of antitoxin: Goodall relates the anomalous results of antitoxin used for recurrent cases, treated in the original attack by antitoxin; then Armit demonstrated some remarkable facts at the Lister Institute. He injected goat serum into a guinea-pig, and in what is presumably the "negative phase," a second dose, it was rapidy fatal. Moreover, the blood of this dead pig injected into the peritoneal cavity of another pig, even in very small doses, killed it in a few minutes. He made no attempt at an explanation of the phenomenon, and yet it demands elucidation, since it may be enough to check not only the indiscriminate exhibition of horse-serum, which is another of the present-day fashions, but also the progress of vaccine therapy. If it does no more than restrict light-hearted dalliance with noxious organisms, even dead ones, and confine their use to those in whom familiarity has bred a wholesome respect, no great harm will come of it.

The Wassermann reaction has been received in London with skeptical cordiality; the tendency at present seems to be in favor of demanding the demonstration of the spirochete as an accessory before the fatal deed of positive diagnosis. Mr. Keetley read a paper a little while ago at the surgical section of the Royal Society of Medicine that met with but an indifferent reception. His main proposition was that the surgeon should try to preserve the vermiform appendix. He adduced Macewen's observations on its physiological utility as a plea, and even found a warrant for his thesis in Metchnikoff's proposals for the postponement of senility. The appendix, he maintains, has a high surgical value as a channel of ingress to and egress from the intestine. As indications for the operation of appendicostomy he tabulates: colitis of various kinds; certain forms of intussusception, chiefly to prevent recurrence; intestinal hemorrhage; typhoid fever and certain other cases in which enteritis occurs; cases of enterectomy and colectomy, as a safety valve; intestinal distention in toxic conditions; for the administration of nutriment *per appendicem;* and finally in intractable constipation. He justifies the transplantation of the appendix so that it lies embedded in the abdominal wall as a treatment of appendicitis, on the ground that it is the intra-peritoneal lie and not the nature of the appendix that is the danger; that many of the structural abnormalities can be righted by plastic measures and the appendix saved to be utilized later on should the unhappy possessor fall a victim to any of the above maladies. Almost the only sympathetic remark made by those who discussed the paper, apart from its reference to colitis, was that as a treatment of constipation it was preferable to Lane's excision of the colon!

Mr. James Berry's communication on traumatic rupture of the intestine, to the same Section, had the great value lent by analysis of successive cases. Previous writers have collected cases from the literature and, therefore, probably included an undue proportion of successes; Mr. Berry's were collected from the records of ten London hospitals. Of 132 cases, 122 were males and 10 females; 14 were children under ten, 32 were between the ages of ten and twenty, and 79 were over twenty years of age; 51 of the cases were due to being run over, 24 to squeeze or crush, 23 to blows, 16 to kicks, and 11 to falls; the great majority of the ruptures affected the small gut; in 22 cases the rupture was multiple and in 24 other severe injuries coexisted. The mortality was 87%; of the operated cases, 80%. The conclusions reached were that rupture of the intestine is by no means so rare as is commonly supposed; the early symptoms are few and fairly characteristic; pain (local, severe and continuous), tenderness, rigidity and vomiting, together with the history of the accident, afford ample data for diagnosis; if operation be delayed until the abdomen is distended or the liver dullness absent, the patient has practically no chance of recovery; secondary rupture is not uncommon, the symptoms in these cases being often delayed for hours or even days; rupture of the intestine is usually produced by direct crush and not by bursting or traction; finally, after operation the patient should be sat up in bed and treated with massive saline infusion.

I have mentioned before the close attention now being paid to the health of children in the compulsory education schools of the metropolis; a committee of inquiry have recommended the establishment of special school clinics near the schools, where cases of defective teeth, — and about 90% of the children are affected thus, — eye defects and simple diseases, skin diseases such as ringworm, favus, scabies and pediculosis, ear defects and simple diseases, especially "running ears," should be treated. It is a sign of the times: we are coming more and more to the system of treatment by medical officers of great administrative bodies, and, of course, so far as state medicine is concerned, that is inevitable. It is a serious question, however, for the profession whose average income has been dwindling for years, and what is more important, a menace to the independence of effort and initiative essential in a progressive science and art.

The very sudden death of Dr. Charles Beevor, physician to the Queen Square Hospital for Paralysis, president of the Neurological Society, and sometime the associate of Sir Victor Horsley in investigations of the cortical centers, came as a shock to his many friends in the profession. Within a few hours of his death, which was due apparently to aortitis, he was presiding at the Neurological Section meeting and in the best of spirits.

Death has been busy too among the younger teachers in London. Why is it that so often those are taken whom we can least afford to lose? *C.*

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, DEC. 12, 1908.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	—	—
Chicago	532	165	Waltham	7	2
Philadelphia	469	123	Pittsfield	9	1
St. Louis	—	—	Gloucester	8	6
Baltimore	177	41	Brookline	5	1
Cleveland	—	—	North Adams	11	2
Buffalo	—	—	Chicopee	6	3
Pittsburg	—	—	Northampton	6	—
Cincinnati	—	—	Medford	8	—
Milwaukee	—	—	Beverly	4	1
Washington	—	—	Leominster	7	4
Providence	—	—	Hyde Park	1	—
Boston	208	59	Melrose	4	1
Worcester	39	8	Newburyport	5	1
Fall River	33	17	Woburn	4	1
Cambridge	26	10	Westfield	3	—
Lowell	34	7	Marlboro	4	1
Lynn	19	6	Revere	1	—
New Bedford	22	8	Attleboro	4	0
Springfield	22	6	Peabody	—	—
Lawrence	23	7	Adams	3	1
Somerville	18	5	Clinton	2	0
Brockton	5	1	Gardner	2	—
Holyoke	17	10	Milford	1	0
Malden	13	3	Watertown	1	0
Chelsea	8	1	Plymouth	—	—
Newton	4	1	Weymouth	4	0
Salem	15	5	Framingham	4	2
Haverhill	9	—	Southbridge	4	1
Fitchburg	11	4	Wakefield	—	—
Everett	7	0	Webster	—	—
Taunton	22	3	Arlington	4	2

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING DEC. 19, 1908.

RIGGS, R. E., passed assistant surgeon. Granted leave under exceptional circumstances, with permission to visit the United States, to take effect about Dec. 19, and to terminate upon departure from Newport News, Va., of the transport to sail for Havana, Cuba, about Dec. 31, 1908.

ROBNETT, A. H., assistant surgeon, Camp Columbia, Cuba. Will proceed to Santo Domingo, Province of Santa Clara, Cuba, and report Dec. 17, for temporary duty during absence on leave of passed assistant surgeon R. E. Riggs.

ALDERMANN, C. G., assistant surgeon. Granted sick leave for three months when discharged from treatment at the Naval Hospital, Las Animas, Colo.

BROWN, E. W., assistant surgeon. Unexpired portion of sick leave revoked; ordered to course of instruction at the Naval Medical School, Washington, D. C.

ROTHGANGER, G., surgeon. Transferred to the retired list from Dec. 10, 1908, in accordance with the provisions of section 1453 of the Revised Statutes.

BROOKS, F. H., assistant surgeon. Detached from the Naval Recruiting Station, Cleveland, Ohio, and ordered to the "Franklin."

THOMAS, G. E., acting assistant surgeon. Ordered to the Naval Hospital, Navy Yard, Boston, Mass., for duty.

THOMPSON, F. W., acting assistant surgeon. Appointed acting assistant surgeon from Dec. 12, 1908.

RANDALL, J. A., passed assistant surgeon. Detached from the "Rainbow" and ordered to duty at the Naval Hospital, Canacao, P. I.

BALCH, A. W., passed assistant surgeon. Detached from the Naval Hospital, Cavite, P. I., and ordered home via the "Concord" and "Supply."

LEE, A. E., assistant surgeon. Detached from the "Concord" and ordered to the "Rainbow."

DOWNEY, J. L., assistant surgeon. Detached from the "Charleston," and ordered to duty at the Naval Hospital, Canacao, P. I.

HIGGINS, M. E., assistant surgeon. Detached from the Naval Hospital, Canacao, P. I., and ordered to the "Charleston."

BUTTS, H., assistant surgeon. Detached from the Naval Hospital, Canacao, P. I., and ordered to the Naval Station, Cavite, P. I.

ALEXANDER, C. E., pharmacist. Detached from the "Relief" and ordered home via the "Concord" and "Supply."

ERRATA.

PAGE 640, Nov. 12, 1908, first column, footnote.—In the sentence, "Each cubic centimeter of a hundredfold dilution of this suspension was estimated to contain 5 mgm. of tubercle bacilli," for 5 mgm., 1-100 mgm. should be substituted; and in the text for 2, 2½, 5 and 500 mgm. of tubercle bacilli, 1-250, 1-200, 1-100 and 1 mgm. respectively should be substituted. (The estimate can be considered only very roughly approximate.)

SOCIETY NOTICES.

NORFOLK DISTRICT MEDICAL SOCIETY. A meeting will be held at Masonic Temple, 171 Warren Street, Roxbury, on Tuesday evening, Dec. 29, 1908, at 8 o'clock. A committee of the Councilors appointed at the annual meeting in June desires the opinion of the Norfolk District Medical Society on the following question: Do you favor allowing members of The Massachusetts Medical Society to do medical contract work, particularly as applied to lodges and societies? Dr. H. M. Cutts will read a paper on "Digitalis." Discussion will be opened by Drs. H. W. White and R. W. Hastings. Light refreshments will be served after the meeting.

WILLIAM H. ROBEY, JR., M.D.,
Secretary.

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION.—The sixty-fifth annual meeting will be held in Atlantic City, N. J., on June 1, 2, 3 and 4, 1909. The headquaters of the Association will be at the Hotel Marlborough-Blenheim.

B. D. EVANS, M. D.,
Chairman Committee of Arrangements.

RECENT DEATHS.

DR. SAMUEL GLUCK, a prominent Hungarian physician of New York, died after a short illness on Dec. 17, aged sixty-three years. He was born in Budapest and was graduated from the University of Vienna in 1871, in the following year coming to New York to practise. He was on the visiting staff of the Mount Sinai Hospital for a number of years and was well known as an obstetrician.

DR. MICHAEL A. KADIEN, of New York, died suddenly from cardiac disease on Dec. 14, 1908, aged forty-nine years. He was a native of Fallsburgh, Sullivan County, N. Y., and was graduated from Bellevue Hospital Medical College in 1901.

DR. ROBERT H. DAVIS, a relative of Jefferson Davis, died on Dec. 15, 1908, at his residence, in Brooklyn, N. Y., aged eighty-two years. He was a native of Mississippi and served as a surgeon in the Confederate Army during the Civil War. Most of his professional life was passed in the South.

DR. ABRAHAM MORRELL CORY died at his home at New Providence, Union County, N. J., on Dec. 16, 1908, aged eighty-two years. Dr. Cory, who was graduated from the Medical and Surgical College of Philadelphia in 1857, was widely known in scientific and literary circles and was the inventor of the "universal solar clock."

BOOKS AND PAMPHLETS RECEIVED.

The Cause of Atrophy in Joint Disease. By Arthur T. Legg, M.D. Reprint.

Correlation of the Physician and the Layman. By William Francis Drewry, M.D. Reprint.

The Cerebral Centers for Taste and Smell and the Uncinate Group of Fits, based on the Study of a Case of Tumor of the Temporal Lobe with Necropsy. By Charles K. Mills, M.D. Reprint.

Splenectomy. By George Ben Johnston, M.D. Reprint.

Cystotomy in the Female. By Edgar Garceau, M.D. Reprint.

The Propaganda for Reform in Proprietary Medicine. Reprint.

The Systematic Relationship of the Coccaceae. With a discussion of the Principles of Bacterial Classification. By Charles-Edward Amory Winslow and Anne Rogers Winslow. New York: John Wiley & Sons. London: Chapman & Hall, Ltd. 1908.

Original Articles.

TUBERCULOSIS OF THE PERITONEUM.*

BY F. B. LUND, M.D., BOSTON.

THE insidious nature of tuberculous peritonitis, the manifold forms in which it may appear and the many conditions, both acute and chronic, which it may simulate, combine to make it a condition of the greatest interest both to the abdominal surgeon and the internist. Often acute in its early manifestations, it may be and is mistaken for acute appendicitis, and the operation alone reveals the nature of the diagnosis. Again, in its chronic form it may run a latent course until perforation of a tuberculous ulcer precipitates the picture of an acute fulminating peritonitis. The contraction of the scar of a healed ulcer or the bands and kinks resulting from adhesions may cause acute intestinal obstruction with all its terrors in a case where the real but unsuspected cause is tuberculous peritonitis. However, the enumeration of the many manifestations of intraperitoneal tuberculosis might take all the time required for this paper, so we will pause at the brink and take up what we can of the various forms later.

Statistical studies of tuberculous disease have been many. Grawitz and Brunn in particular have published statistics of 13,422 autopsies in Germany; Cummins, of 3,405 in Philadelphia, etc. The consensus of opinion is that tuberculous peritonitis is found in 3% of all autopsies and that males are affected in comparison with females in proportion of two to one. Here autopsy statistics show a wide variance from surgical statistics. Surgeons find the proportion of females to males is about two to one. More males are autopsied than females; more females are laparotomized than males; autopsies show terminal conditions; laparotomies, fortunately, earlier stages. Both laparotomies and autopsies reveal unsuspected peritoneal tuberculosis, in the latter case usually accompanied by tuberculosis elsewhere. Neither laparotomies nor autopsies give any idea of the large number of cases which run a latent course and are never discovered.

In three cases of operation for radical cure of hernia in children, and in one case of perforating gangrenous appendicitis (streptococcus) in an adult, I have found tuberculous peritonitis present at the operation. All the patients had been well previous to the operation or attack and remained well afterward. In these particular cases I should think it hardly fair to attribute cure to laparotomy, and feel that without laparotomy they might have run their course unsuspected.

Another case of interest in this connection was operated upon by another surgeon for acute appendicitis with gangrene. The records stated that the appendix had been removed. A sinus which refused to heal followed the operation, and some months afterwards I removed about three inches of appendix, which, on examination by the pathologist, proved to be tuberculous. At this second operation, owing to the number of adhesions and a tuberculosis not being suspected at the time, no investigation was made of the condition of the general cavity. The patient succumbed about a year afterwards to a tuberculous peritonitis.

Statistics as to the source of the peritoneal infection are equally unsatisfactory. Primary peritoneal tuberculosis, however, rarely occurs. Although we may conceive the entrance of bacilli through the genital passages into the peritoneum direct, without the presence of a lesion in the genital tract, and although it has been experimentally found that bacilli may pass through the intestinal mucous membrane and reach the peritoneum without causing a local lesion of the former, such an entrance is the exception rather than the rule. In the majority of cases of peritoneal tuberculosis in the female, the peritonitis begins around the end of a tuberculous Fallopian tube, and in the male about a tuberculous ulcer of the appendix, cecum or small intestine. The genital route of entrance accounts for the larger proportion of surgical cases in females than in males. Swallowed bacilli from pulmonary tuberculosis and infected milk and food account for the various forms of intestinal tuberculosis. A consideration of tuberculous peritonitis entirely apart from tuberculosis of the female genitals and the intestinal tract cannot be made, so close are the etiological and pathological associations. The genito-urinary tract is an occasional source of infection, and more rarely the lymphatic current from the pleura or mesenteric or mediastinal glands; still more rarely, the blood current.

The disease is frequent during childhood, but most frequent between the ages of twenty and thirty years.

VARIETIES.

Aside from the mixed infections which are sometimes given as a fourth or suppurative form, we find that the various types of tuberculous peritonitis are best classified under Osler's three forms:

1. Serous, exudative or miliary form.
2. Nodular or ulcerative form.
3. Adhesive, fibroplastic or cystic form.

These three forms, however, grade into one another gradually and imperceptibly, and between them there is no definite line.

All three have as a usual origin a local peritonitis of the miliary variety with exudation. This miliary tuberculosis most commonly spreads over the greater portion of the peritoneal cavity and is accompanied with ascites; the omentum and small intestines are pushed by the exudate into the upper part of the cavity; the omentum becomes curiously rolled up and thickened, and may be felt as a transverse cord extending across the upper portion of the cavity along the border of the transverse colon. The coils of small intestine may and do become adherent to each other, thickened and fused into a mass, which may also be felt as a tumor in the upper part of the abdomen where it is pushed up by the fluid exudate, the fibroplastic process being a terminal form of the miliary tuberculosis which causes the exudate. The endothelial layer of the peritoneum is destroyed and the adjacent coils of intestine become adherent by connective tissue of varying forms, from the "soft spider-web or fuzzlike agglutinations" described by Murphy to more glistening, edematous, inflamed peritoneum, or even highly organized connective tissue.

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* Read at the International Congress on Tuberculosis, Washington, D. C., Oct. 1, 1908.

Nodular form. — The nodular or ulcerative variety is described by Murphy as a localization of the tuberculous process to numerous small areas, these areas including not only the peritoneal coat, but the deeper structures, such as the intestinal wall, mesentery, uterus and ovaries, destroying the latter perhaps and changing them into caseous masses, causing ulceration or perforation of the intestine, with either a localized or general peritonitis, according to the condition present. In this form it will be readily seen that mixed infection may complicate the picture.

Fibroplastic form. — When the fibroplastic process becomes general, we have the adhesions of the intestines to the abdominal wall as well as to each other, the obliterations of the abdominal cavity and the development of the full-fledged fibroplastic variety of the disease. Circumscribed areas of the peritoneum not becoming involved in the fibroplastic adhesions react to produce fluid, and become surrounded by the adherent coils, producing localized cysts. These cysts may become subject to mixed infections or suppuration.

SYMPTOMS AND PHYSICAL SIGNS.

These will vary with the point of origin, type, acuteness or chronicity, and complications of the disease. In the commonest form, arising from tuberculous salpingitis, we have recurrent attacks of pelvic pain, with more or less fever, not so acute, however, as in the gonorrheal or septic salpingitis. Menstrual irregularity is not marked. The tumor is, of course, felt behind the uterus, diagnosticated as a tube, and operated upon. The tuberculous process may be entirely confined to the tube, and although we find it reddened and adherent, with cheesy masses in its interior, there may be no peritoneal tuberculosis about. On the other hand, the miliary tubercles and ascites may involve the lower portion or even the whole of the peritoneum; or, the fibroplastic form prevailing, there may be the greatest difficulty in digging out the adherent tubes from the masses of adherent intestine which surround and cover them.

Where there is no pelvic pain or tubal tumor, we are left in doubt before operation as to the origin of the disease, and the general symptoms are more prominent than the local. The same is true in regard to the cases of intestinal or appendicular origin. We have here sometimes a large tumor due to the swollen, edematous cecum and its accompanying mesenteric glands, with fever and bloody diarrhea, the tuberculous enteritis which may or may not be accompanied by the miliary tuberculosis with ascites; sometimes as is more common the insidious onset of the miliary tuberculosis with no definite localizable focus of infection, in which the general symptoms predominate over the local, often to the exclusion of the latter. Of these general cases the miliary ascitic variety, the chronic form, is commonest. Here belong the larger number of cases which are admitted to the medical wards for ascites, and upon which the surgeon is sometimes asked to exercise his skill. In these cases there is usually abdominal pain, mild fever and gradual enlargement of the abdomen from fluid. Emaciation and anemia may or may not be present. The diagnosis is frequently made by the presence of a gradually increasing ascites in a young or middle-aged patient, without heart disease or any other cause for the abdominal fluid. A cancerous peritonitis is naturally sometimes impossible to distinguish from the tuberculous variety, but the age of the patient and less marked cachexia, or the presence of a known primary intra-abdominal focus, will usually suffice.

Young patients with gradually increasing ascites and vague abdominal pains usually have tuberculous peritonitis. The surgeon who does not always think of tuberculous peritonitis in all doubtful abdominal cases with general enlargement will frequently be disappointed in diagnosis.

In sharp contradistinction to this variety is the acute form of tuberculous peritonitis. This is fortunately rare, but in its acute origin and sudden onset may and does simulate acute appendicitis and leads to immediate operation. These acute peritoneal symptoms have in one case of my own led to early laparotomy and the revealing of the condition of a tuberculous peritonitis at an early stage before tubercles had appeared. This prevented my making the diagnosis at the time, and when, unaffected by the laparotomy, the disease went on from the acute to the chronic nodular, ulcerative form, with long-continued fever mistaken at first for typhoid, great perplexity ensued and the diagnosis was not suspected till shortly before death, nor made until the autopsy. The case presents so many points of interest that it seems worth abstracting here.

A girl of thirteen years had been ill for two days with abdominal pain and vomiting. She had previously been a delicate child, but was attending school regularly until one week before I saw her, when she had had an attack of abdominal pain which kept her home from school for one day. I found a thin, delicate-looking girl, with a temperature of 104°, pulse 120 and of good quality, tongue moist, color and general appearance good, abdomen everywhere tender, but no muscular spasm. On account of the absence of spasm, high temperature and general good appearance, the case was thought not to be acute appendicitis until two days later, when general abdominal spasm as well as tenderness were present; the temperature was 103° and the child looked worse. Tubal infection was thought of and the vulva and urethra carefully examined for redness and discharge, not the slightest evidence of either being found. Median laparotomy below the umbilicus showed a greatly injected, thickened, purplish peritoneum. The cavity contained considerable dark, thick, greenish serum. The injection was greatest about the Fallopian tubes in the pelvis, and the lower portion of the omentum, which lay in the bottom of the pelvis in contact with the tubes, had on it when drawn up a few flakes of fresh fibrin. The tubes, while purplish and injected, were not distended and contained no pus. The appendix was greatly injected and contained a large concretion in the tip. It was removed and the mucous membrane throughout was found to be pale and normal, the inflammation being confined to the peritoneal covering. No sign of a tubercle could be found anywhere on the peritoneal surface. After evacuation of the fluid, the abdomen was sutured without drainage. The girl's symptoms improved at first, but the temperature ran for six weeks from 101° or 102° at night to normal or subnormal in the forenoon. There was slight diarrhea. Negative Widal's excluded typhoid. The abdomen gradually distended, and individual, thickened, distended coils could be felt in various parts of it. The girl went home and was up and about for several weeks. Then great induration of the abdominal wound developed, followed by abscess, opening, foul discharge, fecal fistula and death six months after the operation.

Autopsy: Miliary tuberculosis of the mucous membrane of the uterus. Marked general miliary tuberculosis of the peritoneum, with adherent intestines surrounding caseous masses, and general enlargement and caseation of the mesenteric glands. Fecal fistula in lower portion of ileum.

We had here a case of acute tuberculosis of the peritoneum in a young girl, secondary to tuberculosis of the uterus, ending in the chronic nodular form, mixed infection and death. Murphy has called attention to the fact that tuberculosis of the uterus is usually found in childhood and old age, before and after the menopause. During the menstrual life, when the uterine mucous membrane is shed every month, it is almost unknown, while tubal tuberculosis is common. How the bacilli reached this girl's uterus is a puzzle. It seems as if they must have been introduced through the vagina. The lungs and other portions of the body at the autopsy were normal. The case was of great interest to me, first, from the simulation of acute appendicitis, and second, from the opportunity to examine and note the appearance of an acute tuberculosis of the peritoneum before the tubercles appeared. A thickening edema and dull purplish congestion with dark greenish fluid were the conditions, only a very little fibrin in small, dark yellow, soft, translucent flakes being present, and that in the bottom of the pelvis where, about the openings of the Fallopian tubes, was the starting point of the disease. The difference between this and the bright red congestion, seropurulent fluid and often abundant opaque fibrin of an acute septic appendicitis was notable.

In the fibroplastic and nodular form of peritonitis the exudative variety has usually preceded, and after its subsidence we are confronted with the symptoms not of the peritonitis itself, but of colicky pains due to obstruction of the bowels from kinks and bands; indurated, painful tumors due to walling off of serous or seropurulent exudate; distention of thickened coils of intestine which can be felt through the abdominal wall, with, of course, fever, emaciation, malaise, loss of appetite and other corresponding general symptoms. The frequency of the development of tumors due to the presence of swollen and caseated mesenteric and retroperitoneal glands should here be noted, and the seriousness of the exhaustion and emaciation which follow this complication may readily be appreciated.

In the cases secondary to tuberculosis of the intestine, ulcers and strictures due to internal ulceration may be complicated by ascites and adhesions from the peritoneal process, and by edema and thickening of the mesenteric glands, etc., making a most difficult and complicated clinical picture and one never twice alike. The symptoms of intestinal obstruction in the fibroplastic form are due to adhesions, bands and kinks, and may be the first to attract attention to a peritoneal condition, as in the case of Mrs. L., a woman of about thirty-five years of age, of fair, bright complexion, good color and fair flesh — in other words, a healthy-looking woman. She had suffered for about two years with mental depression, constipation, epigastric pain, backache, nausea and weakness, beginning with what was called stoppage and followed three months later by a second attack. It was said that she had vomited blood and that she had had a bunch in the right hypochondrium. Careful abdominal examination negative. No evidence of fluid. No distention. Slight epigastric tenderness. Symptoms of neurasthenia were so marked in this case that the patient had been treated for some time at a sanitarium. After talking with her two or three times, I concluded she was too sensible to be a neurasthenic and that there must be some serious trouble in the abdomen, although an exact diagnosis could not be made. An incision through the upper part of the right rectus exposed the pylorus, gall bladder and liver. Numerous tubercles were felt on the liver and abdominal wall. Reaching down through the incision, a mass behind the uterus was felt in the pelvis, and tubercles of various sizes, many of them very large, were felt and seen all over the peritoneum. A median incision below the umbilicus was made and a hernia of several loops of intestine was found through an opening in the mesentery of the ileum. The hernia was reduced and the opening sutured. A cicatricial stricture of the ileum was found about eight inches above the ileocecal valve. Opposite the stricture, and for a considerable space above and below, the mesentery was very much thickened and edematous, so it was thought that resection would be impossible, and, therefore, a lateral anastomosis was performed around the stricture. The abdominal wall was sutured without drainage. Recovery from the operation was uneventful. The abdominal symptoms were considerably but not completely relieved. Constipation, as might be expected from the amount of adhesions, required constant treatment. The patient six months after the operation had, however, gained about ten pounds in weight and looked perfectly well. This case illustrates the fact that surgery of the fibroplastic form of peritonitis is practically limited to surgery of the complications, adhesions, strictures, etc., as well as the difficulty of diagnosis.

TREATMENT.

However complicated are the etiological and pathological problems presented by this multifold disease, the chief interest to us as surgeons lies, after all, in the treatment. The progress of the surgical treatment of tuberculous peritonitis from its accidental discovery, through its empirical stages to its present scientific position, is one of the most interesting bits of present-day surgical history. In following the story we shall note the contributions of surgery not only to the treatment, but to the pathology, of the disease, and mark the results which have followed the extension of the empirical incision and suture of the peritoneal cavity to the rational and far more effective procedure of the search for and, where possible, removal of, the primary focus.

The surgical treatment of tuberculous peritonitis dates from 1862, when that pioneer of abdominal surgery, Sir Spencer Wells, opened a case of tuberculous peritonitis by mistake for an ovarian cyst, sewed it up again, and saw his patient recover and remain well. Since then the operation of opening the abdomen for tuberculous peritonitis has been practiced. (It may be noted in passing that this was one of the encysted cases in which the collection of fluid in the median portion of the abdomen so closely resembles an ovarian tumor.) König, however, in the year 1881, was the first to formally advise the operation, and in 1889 published 131 cases with (he claimed) about 70% of cures. Numerous statistics of the results of surgical treatment have since been published, with from 60 to 80% recoveries. Among the authors may be mentioned Konig, 1890; Roessle, 1893; Margaruzzi, 1896; Ebstein, Krencki, Thönes, Mikulicz, Körte and others. There have been many good surgeons and careful students of the disease, such as Schede, Czerny, Pribram, Kussmaul, Shattuck, Borchgrevink and Fenger, who have laboriously proved, as they thought, that the results of operative treatment were no better or slightly worse than in cases treated medically, by tapping, tonics, etc. Through all these controversies stood out the fact that only in the operated cases which recovered could the diagnosis be absolutely made, involving unreliability in the medical statistics of recovery, and also the fact that, since the operative period, the prognosis of tuberculous peritonitis had improved from the almost absolutely bad prognosis of the seventies to the 60 to 85% "cures" of the nineties. This was partly due to the fact that in the pre-operative period the diagnosis was not made before the disease was well advanced, and the light cases which recovered gave no sign, and partly to several other reasons connected with the operation. This skepticism as to the results of operative treatment resulted badly in many ways. Cases were kept under medical treatment till everything had been tried in vain, before, "weary and worn and sad," they were turned over to the surgeon for a happy dispatch. The method tried after everything else has failed has a bad chance, and forlorn hopes will probably always continue to be forlorn. The surgeons, however, sometimes prevailed, by the argument, if this is a good thing, let us try it in time to do some good with it. The fact that many diagnoses were cleared up was not the least of the benefits conferred by surgery in these doubtful conditions. One result of many years of practice in opening abdomens was the establishment of the fact that the ascitic cases were favorable to laparotomy, while the fibroplastic were not. This result does not seem strange when we consider that we were trying the treatment of opening the abdominal cavity in cases in which there was no abdominal cavity to open, as it had been obliterated by adhesions, and that in our attempt to find a cavity somewhere, the danger of opening the intestines and causing a fecal fistula which could in no wise be induced to heal was by no means small. The reason why in the ascitic form laparotomies did good nobody knew. The admission of air, sunlight, even hostile bacteria, at the operation, was given the credit. Abdomens used to be held open for some time while given an interior sun bath. Irrigation was recommended, sponging, not sponging, manipulation, avoidance of manipulation. Drainage and non-drainage had their advocates, but it soon became the general consensus that drainage was to be avoided as carrying with it two dangers, namely, those of secondary infection and fecal fistula.

A theory which seemed plausible was that the irritation produced by the laparotomy, together with the loss of tension due to the evacuation of the fluid, determined a flow of fresh, antitoxin-bearing blood to the peritoneum, which enabled it to successfully overcome the process. In a condition so chronic in character, however, this seemed hardly satisfactory, even in certain cases in which repeated laparotomy was followed by recovery. Bier's congestion theory was in harmony with this view, however, and it had many adherents. The theory at this time which came nearest to the truth, however, was that the adhesions and scar tissue produced by the operation tended to a localization, and consequent at least partial walling off and strangulation of the process. It was J. B. Murphy, about 1904, who observed, and was one of the first to appreciate the importance of the fact, that in many cases of tuberculous peritonitis in women the Fallopian tube was thickened and presented ulcerations in the mucous membrane, and what was more, that the end of the tube was open, floating free in the serous exudate and discharging its contents into the abdominal cavity. He calls attention in these cases to the futility of opening the cavity and evacuating the fluid unless at the same time the diseased tube, which is the source of infection, be removed. He called attention to the fact that in cases laparotomized before this principle was recognized, the evacuation of the fluid might bring the *ostium tubæ* in contact with surrounding parts and so close it by adhesions as to wall off the process, when it might either subside or, if it continued, remain confined to the interior of the tubes and be cured by a subsequent operation for their removal. Murphy also called attention to the fact that if the focus of supply to the peritoneum is a mesenteric gland or an appendiceal tuberculosis, its removal is indicated, as is the removal, under similar conditions, of a tube. It is this last step in advance, the recognition of the importance of the removal at operation of the cause, if possible, of the infective process, which has given us a rational basis for our treatment by laparotomy, the removal of the infective process. We may not unfairly assume that the cases which were laparotomized previous to our knowledge of this principle got well, some of them because they would have recovered without operation and some because the closure of the tube or the encapsulation of some other focus by the resultant inflammation shut off the source of supply. In Murphy's words, "Should the communication between the peritoneum and the focus be destroyed, then the laparotomy will produce a cure of the peritoneal conditions the same as if the focus is removed. With the source of supply cut off, the tendency to repair of the peritoneum is great, even without laparotomy, and in this class of cases internal medication or expectant treatment avails."

If only in the lung, as in the peritoneum, the removal of the primary process were sometimes possible, how different might have been the results of the surgery of that organ!

When the tuberculous intestine is the primary focus, if the adhesions be not too extensive or the area too great, the indication is to resect. A tuberculous cecum should be removed when possible, and if not possible on account of too extensive involvement of the ascending colon, mesenteric glands, etc., or weakness of the patient, an anastomosis around it may be made between the ileum and the transverse colon. I have resected the cecum successfully in these cases, and also, I regret to say, unsuccessfully.

One of the most extensive cases which I ever met, in a thin, feeble, young woman, was obviously so unfavorable to resection that I did the ileocolic anastomosis. She did beautifully, grew fat, married and had a baby. On the basis of this case, I am not advocating marriage and pregnancy as a cure for cecal tuberculosis, but only stating the fact.

In a case of tuberculosis of the ileum with stricture, where resection was prevented by thickening, edema of the mesentery and mesenteric noditis, I have successfully done lateral anastomosis around the stricture. (See case of Mrs. L.) Operations for the removal of tuberculous retrocecal glands, in some cases with caseation and abscess formation, have in my hands been successful and curative.

W. J. Mayo, in 1905, published a report in 144 cases and called attention to his improved results in tuberculous peritonitis, ascitic form, since removal of the infective focus was practiced. Cases were cured in which several relapses and re-operations had been previously done.

In the nodular or ulcerative form, the surgical problem becomes entirely different and much more difficult of solution. This, more often than the previous variety, is due to enteric and glandular infection. Here, as in the adhesive variety, the greatest care must be taken in separating adhesions lest the intestine be opened and the lamentable complication of an intractable fecal fistula result. Cysts and caseous masses, if opened, should not be drained but disinfected and closed. In these two classes of cases it may be doubtful whether surgical treatment directed at the disease per se is often of benefit. Surgery may, with more wisdom, be directed at the complications, such as intestinal obstruction, perforation, etc., than at the disease itself. The dangers are great, judgment often difficult and all operative procedures apt to be unsatisfactory.

The same general statements apply to mixed infections either with one large or multiple small abscesses. They should rarely be drained. Mixed infections of tubal or appendiceal origin are, of course, treated by removal of the tube or appendix, the utmost care being taken to avoid injury to the intestine. If injury either to the rectum or other intestine should occur it must be closed by several rows of sutures and wide apposition. Murphy has successfully sewn the uterus against an opening in the rectum so as to close it.

In operating for the exudative form of tuberculous peritonitis where the cause is not known, it is well to do as Mayo advises and make the incision in the median line in women, and in men over the appendix, so as to be ready in either case for attack upon the most probable primary focus. It has been my fortune in men and boys to meet with many cases in which the primary focus could not be found. In these cases the appendix has been removed, but has been found to show no more involvement than the remainder of the peritoneal cavity. Here we have been accustomed to evacuate the fluid, wash out with salt solution, suture without drainage, and as soon as possible get the patient up and into the country under the best possible hygienic conditions.

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DEMENTIA PRECOX, PARANOID, ASSOCIATED WITH BRONCHIECTATIC LUNG DISEASE AND TERMINATED BY BRAIN ABSCESSES (MICROCOCCUS CATARRHALIS).*

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We present here the analysis of a case of delusional insanity. During life the case was thought to belong possibly in Kræpelin's group of dementia precox. One main interest of the case lay in the fact that, by a little emphasis of certain features, the delusions could be regarded as of psychogenic origin, as a malignant elaboration of ideas following a personal disfigurement. There were, however, certain other features rendering a purely psychic origin doubtful for these delusions. Notable among these other features are the autopsy findings, which point to a somatic disease coincident in time with the mental disease, an obstinate lung disease with frequent periods of toxemia. Whatever conclusions are warranted from these features, the case is in itself interesting and, particularly in respect to the chronic meningitis and brain abscesses found at autopsy, presents some data requiring special consideration.

I.

The subject of this history showed few peculiar or striking traits until the age of twenty-five, when, upon the Fourth of July, 1902, his face was disfigured by powder from a small cannon. Thereafter his mental attitude was altered and eventually developed into a picture characteristic of dementia precox, but with delusions of negation. Meantime a chronic pulmonary disease, with multiple abscesses, was developing and giving rise to the suspicion of phthisis. In 1907 the patient died, was autopsied at the Danvers Insane Hospital, and showed chronic abscesses in many organs.

Of special interest was the discovery of multiple abscesses in the brain. The cell-contents of the meninges were such that a chronic meningitis, possibly dementia paralytica, might have been suspected.

A brother, two years older than patient, is living, in good health, without peculiarities. Patient's father, a nurse, still living, has no peculiarities. Patient's mother died in patient's early life in childbirth, having had poor health, fainting spells and dropsy during pregnancy. A maternal uncle died of tuberculosis. Both grandmothers are said to have died of paralytic shock, both grandfathers of gangrene of the foot. There is no suspicion of mental disease in the family. The family seems to have been American throughout.

The patient made good recoveries from ordinary children's diseases. Occasional headaches, for which no cause is known, affected the patient from eight to fourteen years of age. The patient attended public schools in New York until sixteen years of age, worked as errand boy and in other capacities until nineteen, and followed chair making (ten to thirteen dollars a week) until about the time of his accident. Pneumonia and pleurisy in early life, according to patient. Gonorrhea at twenty-three. No history of syphilis. The patient averred that he had drunk excessively (three to ten glasses of whiskey almost daily) for a number of years; no delirium tremens, no arrests. He is described as reticent, but usually cheerful. Unmarried.

July 4, 1902, patient was injured by the premature explosion of a cannon, and his face was blown full of powder. He was carried to the Cambridge Hospital (for access to whose records we are obliged to Dr. L. S. Hapgood), where he was operated on for traumatic cataract of the left eye. There is no record of mental change during his three weeks' stay at the Cambridge Hospital.

After leaving the hospital patient became rather depressed and worried over his disfigurement. The depression deepened. Patient became inactive and late in December, 1902, grew much worse, talked little, but said he was losing his reason and would never get well.

Jan. 5, 1903, patient was admitted to the McLean Hospital for the Insane. We are indebted to Dr. G. T. Tuttle for the following abstract of events till his discharge Feb. 20, 1903.

During his stay in the hospital he was at first much depressed, but gradually improved. At first he said he could not go out and meet people "as they all know" of his case, that he was "forsaken by everybody," that he was too weak to dress, that there was no case in the hospital like his. He was mentally quite clear, was perfectly well oriented, but seemed a little worried. He gave in detail the story of his illness, adding to the above that about two weeks before entrance he experienced a peculiar "lifting" sensation, and since then his feelings are different, his senses are gone, he has no affection for anybody. He thought that his masturbation was the cause of it all, and this was his principal worry.

During the first of his stay he was quite moody and depressed, but after the first of February he began to feel better in spirits, could think more clearly and began to take more interest in things about him. He improved from that time and for the last ten days of his stay he acted perfectly naturally, said that he wished to go home and that he felt able to go to work. At the solicitation of his brother he was allowed to go on a visit on Feb. 20.

Five days after discharge from McLean, patient tried to commit suicide by shooting in the head. He was committed to the Danvers Insane Hospital, March 17, 1903, where he stayed the remaining four years of his life.

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* Read at a meeting of the Boston Society of Psychiatry and Neurology, February, 1908.

The patient at Danvers was of extreme interest for two reasons, (1) on account of the nature and course of a lung disease (variously regarded as abscess and as phthisis), and (2) on account of the mental symptoms which reminded one of certain features in involutional cases.

The course of the somatic disease may be first considered. Upon admission the sequelæ of the Fourth of July accident were obvious in thickly studded powder-marks of face and ears and in corneal opacities of the left eye. Five punctured wounds, the result of patient's suicidal attempt, and a surgical incision above these wounds, were practically healed.

The lung showed dullness over right lower back and there was diminished expansion in this area. The patient was practically normal in other respects save that vision in the left eye was much impaired, the left knee-jerk was diminished, and the biceps, triceps and wrist reflexes could not be obtained. In certain lights the left pupil was larger than the right. There was not, at this time or later, any suspicion of exudative or degenerative brain disease. Although difficult to disengage from frank delusions, the patient's statement that he had been feeling poorly for months may reflect somatic conditions.

Possibly the symptomatic onset of lung disease may be put back in the latter part of 1902. At all events, the physical conditions noted in the chest on admission were quickly translated into symptoms. There was constant coughing. In less than a month after admission patient became extremely weak and coughed up first blood-stained, later muco-purulent, material. The dullness over right lower back found on admission persisted, and, indeed, lasted till death; but the upper part of the chest became dull also. Breathing was suppressed in the right lower back and harsh above.

Two weeks later the cough had subsided and the patient was up and about. The left back now showed diminished fremitus and breathing.

Ten weeks later (about fourteen weeks after admission) blood was again coughed up and the lung disease seemed localized in the right upper lobe. Occasionally the temperature rose to 104° without chill.

Such attacks were more or less frequent features during 1903–1907. Some of the examiners thought the case one of tuberculosis; others, lung abscess. Repeated examinations of the sputum for tubercle bacilli failed to show any, except a few upon one occasion in 1903. In view of the post-mortem examination, it seems best to regard this finding as accidental.

In December, 1906, patient had severe hemorrhages and brought up thick mucous. Although no tubercle bacilli could be found, the patient was placed in the building for tuberculous patients and ran a constant temperature of variable height. A week before death patient developed abscesses of left arm and of right great toe, containing foul, thick, dirty-brown pus.

In view of the clinical course of the case and the post-mortem findings described below, it seems that the chief features on the somatic side may be explained by fresh outbreaks of lung disease with invasion of greater and greater areas, finally involving the whole lung with abscesses and pneumonic reactions of various ages. The patient was toxemic at various times and may even have been septicemic at times, as at the close of life.

Turning to the psychiatrical side, we find a constant picture of depression, personal delusions of a self-accusatory and negating cast, with a tendency to delusions involving the rest of the world. Certain delusions about his viscera are not inconsistent with the somatic disease in progress. The mental picture varied in severity, and the symptoms came in the form of attacks, sometimes with katatonic excitement. The katatonic features of the case became more characteristic toward the last. During the toxemic periods due to the lung disease patient was quiet, but on questioning revealed depressive delusions having relation to his somatic condition.

The following notes from the clinical records (for which we are indebted to Drs. H. W. Mitchell and C. B. Sullivan) show these points more in detail.

Examination of March 18, 1903: Patient in all respects normal except for depressed emotional expression, which, however, was only appropriate to the delusive ideas centering upon himself and his unhappy condition. He said he had been feeling poorly for months and in December vowed he would give up drinking, but on New Year's day drank once more. "On New Year's day I had an awful time. Could not do anything. Came to the North Union Station and a flash came over my head. My brain was paralyzed. All my troubles left me and I have been no good since. My spirit was taken away and I don't know how I am to die. I have got no future. I feel awfully. Haven't been like other people since then. I can't work — got no power unless some one tells me. Couldn't even get bullets into my head because skull was thick and brain was small. I am the worst thing that ever lived, worse than a murderer. Given up by God — the lowest thing that can be." "I never was just right, but I didn't know enough to have any trouble. I thought I knew everything until I lost my spirit. I have always been a d—d fool. Worse than that; worse than anything could be." Irritability on leading questions about mental disease. Abject depression and weeping when speaking about himself.

Conversation March 25, 1903. "You never saw anybody like me. You can't understand my case. I was born different than any one else. I got no spirit of God. It's awful. I have got a good father and good folks, but there is no hereafter for me."

April 7, 1903 (about a week before a severe pulmonary attack), patient complained that his viscera had become changed, that he had coughed out his lungs, that his spirit had gone.

April 13, 1903. "I am dead, that is all there is about it. The dead can talk and move around in the world. Does it not say so in the Bible? Does it not say a dead man shall walk erect? I can stand every test for a dead man."

For months, and throughout 1904, patient was depressed, slow in movements, a little seclusive and failed to express spontaneously any delusions. He would sometimes agree that former ideas were delusions. He was sometimes comparatively cheerful.

Early in 1905 depression deepened, apprehensiveness, suicidal and "peculiar" ideas developed. Feb. 13, 1905, patient had a fainting spell, but got into bed before it came on, thought he was dying, and his heart seemed to stop. "Brain all gone, ran out through spinal cord, skin rotten, no sensation." On conversation agreed that his brain was not yet wholly run out, and appreciated that his ideas were morbid.

Feb. 15, 1905. "I haven't got good news for you to-night. The world is coming to an end. The devil has been pounding on the walls all day. It must have been the devil. Who else could it have been? I would like to go away and leave this world. The world is going to be burned up, it is so wicked, and he is the cause of it all." Patient also said about his somatic disease, "This is leprosy I am spitting up." When physician suggested that he prepare for death, he was quite willing for the event to occur at once. Patient though McKinley's death was in some way due to him, having been so informed by God. Feb. 19, tried to commit suicide by choking. Thereafter grew retarded and disinclined to keep oriented for time and to think. Such depressive ideas as the following were prominent: that he was the cause of the end of the world, that the world is degenerating, that he is to be cut up and put down the hopper, that he is nothing more than manure.

March 8, 1905. Agitation, worry, slow anxious wandering about ward, weeping. "Seems as if everything I do is wrong, but I don't think it is." *Q.* "What is wrong?" *A.* "Well, last night I didn't want to go to bed, and they had to take hold of me. There is Christ there in that last bed (pointing to a general paretic) and he can't help me." Then began to pray, saying: "Have mercy on us and help those who are afflicted and I have wronged, and I wish that I might have the devil taken out of me, and if there is any good in me that I might have life sometime and be washed out that I might have life sometime." Asked to whom he was praying says, "I don't know whether it is God or the devil. God is mighty over all."

April 13, 1905. Sitting in chair, apparently quiet, but on seeing physician, patient became agitated, said, "The world came to an end, and I am wild," began to grind teeth and snarl, tried to bite physician's hand lain on patient's shoulder, clenched fist, assumed an attitude as if about to spring, and, turning his head from side to side, said, "I can't stop this, I can't help it." Similar "wild beast" simulations came at intervals during two months. Occasional suicidal attempts by strangling.

Nov. 7, 1905. Kept left eye closed and left side of mouth drawn up, explaining mannerism by saying that he took medicine that entered eye. Orientation and memory perfect. Said he had passed both ends of the world and got behind everybody. "When I spit, it goes right back into my body again." "Somebody is bringing all the heavens down." "I am murdering the whole world and can't help it."

Occasional excited spells, with running up and down the halls and a variety of bodily contortions. The most common movement was a turning of body from left to right with a sudden jerking of head backward and a flow of irrelevant disjointed talk.

Throughout his bedridden condition in 1906–7 patient maintained orientation, memory and social relations very well and was little disturbed.

Thus, during his Danvers life, the delusions varied more in their spontaneous expression than in their qualitative content and were gradually growing severer and more comprehensive in the topics involved. Katatonic excitement was a feature in 1905, and a few mannerisms developed later. Peculiar contortions came in 1906. After December, 1906, the somatic disease got the better of the motor expression of patient's delusions. Further analysis may be deferred till the autopsy findings have been reviewed.

II.

The autopsy, forty hours post mortem, was performed by the writers. The anatomical diagnoses are as follows, arranged in groups so far as possible with dates of origin.

CHRONIC.

- *Bronchiectases of lungs,* with *abscesses.*
- *Fibrosis of posterior half of right lung.*
- *Bilateral chronic obliterative pleuritis.*
- *Chronic fibrous auricular endocarditis.*
- *Chronic fibrous pericarditis* (milk patch of right ventricle).
- *Chronic gastritis.*
- Slight *aortic sclerosis.*

July, 1902.

- *Gunpowder granules in face and ears.*
- *Corneal opacities* of left eye and (slight) right eye.

March, 1903.

- *Scars of bullet wounds of right temple.*
- *Bullet in right temporo-parietal suture.*
- *Perforation of skull at pterion,* with focally *adherent dura mater* and slight *localized leptomeningitis.*
- Small old *lacerations of cerebrum* beneath intact inner table under imbedded bullet.

RECENT.

- *Abscesses of lungs.*
- *Organizing pneumonic foci.*
- *Acute pneumonia.*
- *Swelling of bronchial lymph nodes.*
- *Abscess of left forearm* (surgical incisions).
- *Onychia of left hallux* (surgical removal of nail).
- *Abscess of left chest.*
- *Abscesses of kidneys.*
- *Abscess of spleen,* with local *acute peritonitis.*
- *Multiple abscesses of brain,* involving
  1. *Left second and third temporal gyri.*
  2. Tip of *left occipital lobe.*
  3. Tip of *right occipital lobe.*
  4. Posterior half of *left cerebellar hemisphere.*

The details of the protocol follow: White male, 163 cm. long. Development good. Nutrition fair. Rigor mortis, general and moderate except in left elbow. Subcutaneous tissues of the upper third of the left forearm are infiltrated with pus, having a foul odor. Upon incision, pus is found to affect not only the subcutaneous tissues, but also the superficial muscles, but does not involve either the bones of forearm or the joints of the elbow. Two surgical incisions of the left elbow region of recent date. Onychia of one left hallux without involvement of bone. Nail of the left hallux has been removed surgically. The muscles of the left foot are less rigid than those of the right. The subcutaneous tissues of the face and of the anterior aspect of both ears are filled with powder granules. Depression with cicatrix, 3 m. in diameter by 0.5 cm. deep, lies at a point 3 cm. posterior to malar border of orbit and 3 cm. above zygomatic process.

Subcutaneous fat of abdomen 1.5 cm. deep. Subcutaneous fat in tissue overlying right second and third rib with intercostal muscular tissue show infiltration with pus which wells up from a small cavity into the muscular tissue from an abscess cavity in the lung tissue below.

Peritoneal cavity. — The free surface of the spleen shows a thin sheet of grayish fibrin of recent formation overlying an abscess cavity of the spleen tissue, but extending several centimeters beyond the region of the abscess. Beneath the peritoneum of the lesser cavity overlying the pancreas, at a point about midway of the body, is an abscess 1.5 cm. in diameter involving both subperitoneal tissue and pancreatic tissue.

Omentum moderately filled with fat. Appendix buried with adhesions. Intestinal tract not remarkable. Mesenteric lymph nodes not enlarged.

Pleural cavities. — Both obliterated by dense old adhesions which are firmest in the right back, especially in the middle and lower portion.

Pericardial cavity. — Not remarkable. Finger-nail-sized milk patch over right ventricle opposite the middle point of the intra-ventricular septum. Pulmonary arteries opened in situ show fluid blood and cruor clot.

Heart. — Weight, 245 gm. Muscle firm and red. Inner surfaces of auricles are of a brownish-gray color. Valves not remarkable. Pulmonary arteries normal. Chambers contain chicken fat and cruor clot.

Measurements: Tricuspid valve, 8.5; mitral valve, 7.0; aortic valve, 6.5; pulmonary ventricle, 11.5; left ventricle, 1.5; right ventricle, 1.5.

Lungs. — Left, 585 gm. Right, 635 gm. There is no portion of the lungs which fails to show exudate. Posterior and central portions of both lungs contain numerous abscess cavities which show gray, rough, shaggy walls and contain slightly creamy yellow pus. No extensive connection was demonstrated between the abscess cavities and bronchi. The lung tissue outside of the abscess cavities was dark red, moist and friable. The posterior half of the right lung is remarkably tough and is provided with an extensive surplus of fibrous tissue. Bronchi reddened. Pulmonary vessels not remarkable. Bronchial lymph nodes, swollen, but fail to contain foci of tuberculosis.

Spleen. — Weight, 235 gm. In the middle of the diaphragmatic surface of the spleen is a dark colored area of fluctuating consistence bearing a slightly grayish center, from which, with slight manipulation, pus may be made to well forth. On section the abscess is found to measure 2.5 x 1.5 cm. in diameter and to lie nearer the diaphragmatic surface of the spleen than to the hilus. The walls are rough and shaggy; the contents, creamy pus. The spleen substance in general is of grayish-pink color and very pulpy. The Malpighian bodies cannot be made out in the grayish-pink substance. Accessory spleen, 1.2 cm. in diameter, lies in connective tissue opposite the splenic flexure.

Gastro-intestinal tract. — Esophagus not remarkable. Stomach walls are thin and smooth. The rest of the intestinal tract is normal throughout, although explored carefully to discover ulceration.

Liver.— Weight, 1,765 gm. Border slightly rounded. Several so-called post-mortem ischemic areas are found, but no evidence of tuberculosis. Consistence slightly diminished. Color slightly translucent, grayish-pink. Gall bladder not remarkable.

Adrenals. — Show no evidence of focal lesion.

Kidneys. — Weight, 375 gm. Strip with abnormal ease. Substance was of a slightly opaque gray-pink color, generally suggesting the appearance of acute nephritis. Both kidneys show several abscesses, from 0.5 to 3.0 cm. The abscesses resemble those of the pancreas, lungs and brain, and are most numerous and extensive in the right kidney. Pelves, ureters and bladder walls not remarkable.

Testes thread well.

Aorta. — Shows a few punctate spots of yellow color along the border of the sinuses of Valsalva.

Head. — Covered by thick black hair. On the right side, two fingers-breadths posterior to the orbit and on a level with it, is a depression in the bone into which the ball of the thumb fits, having a firm base. A little posterior to this, just above the ear, a sharp prominent mass is felt just under the skin, about the size of a pea. On stripping back the scalp, which is of normal thickness throughout, this mass is found to be a flattened bullet, approximately .22 caliber, firmly lodged in the skull cap, its entrance point lying in the temporo-parietal suture line just above the ear. The depressed area felt on external examination is found to be a perforation in the bone in the neighborhood of pterion, 1.8 cm. in size, the base formed of tough fibrous tissue which when raised exposes the brain to view. Except for a slight blackening of the tissue immediately surrounding these two regions, the scalp is of normal appearance. *Calvarium*, except as noted above, is normal; on removal it is seen that the bullet does not penetrate the inner table. *Dura* is adherent to edges of perforation; elsewhere not abnormal except that it appears everywhere so thin that the convolutions of the brain are easily visible through it. *Pia* generally normal. There is, however, very slight injection over the fossa Sylvii directly under the perforation in the skull, and a few adhesions to the dura at this point. In the process of extracting the brain a large abscess in the left lobe of the cerebellum is exposed. This abscess occupies nearly one half of the lobe in its posterior portion and contains thick, creamy, foul-smelling, puriform material. On further examination, several more similar areas are found as follows: (1) An abscess the size of an English walnut occupying parts of the second and third temporal gyri in the left, as shown in the diagram. Smear from this was similar to that from the cerebellum. (2) A small softened area occupying the tip of the occipital lobe in the region of the gyrus lingualis. On section pus exudes apparently from just under the cortical gray. (3) A similar area on the other side in almost homologous position. (4) A diffusely softened area over one parietal region.

Convolutions are of normal size and in unaltered regions the cortex appears of normal depth. Fluid from the third ventrical is not purulent.[1] On the surface of the convolutions, directly below the point at which the bullet was found, appear three small brownish areas, slightly depressed, none of them more than 5 mm. in diameter; the center of each is dark brown, the color shading off toward the periphery. On the upper and posterior portion of the right mid-frontal gyrus there is a small dull white patch, 2 mm. in diameter, possibly a little firmer than the surrounding tissue, which has a slight brownish discoloration. No similar masses seen at base of brain. Except for the localized softenings described, the brain is of normal firmness, standing up well from the table. *Vessels* at base normal.

Pituitary gland. — A small, firm, white mass appears about 2 mm. in diameter. *Base of skull* normal. *Middle ears* show no signs of acute or chronic inflammation. The larger *sinuses* opened in situ contain fluid blood and post-mortem clots.

III.

A smear from the cerebellar abscess showed polynuclear leucocytes together with many organisms, some of which stained by Gram and some were Gram-negative. No tubercle bacilli could be demonstrated. Two guinea-pigs inoculated subcutaneously with pus from cerebellar and temporal abscesses respectively failed to develop tuberculosis.

Agar plate cultures were made from heart's blood and temporal brain abscess. The heart's blood culture developed one small colony, followed by two more after several days, of a Gram-positive bacillus occurring in chains. This organism was not further studied.

Two plates from the temporal lobe abscess developed, one several, and the other numerous, small white colonies of a Gram-negative diplococcus.

This diplococcus grew feebly and, after seventy-two hours, practically not at all. It grew slightly on

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[1] Cerebrospinal fluid from ventricle shows 795 cells to 100 fields. Lymphocytes, 25%; endothelial cells, 70%; plasma cells, 3%; polymorphonuclear cells, 2%.

[illegible] without liquefaction. Milk was unaltered by this organism. There was a slight gas production on glucose agar. There was slight stringy growth at the bottom of the bouillon tube in twenty-four hours. On blood agar the organism grew in larger opalescent moist colonies.

These organisms were not quite pure since one colony in the first plate and two in the second turned yellow and proved to consist of staphylococci. These organisms failed to liquefy gelatine.

The Gram-negative diplococcus was thought to be of more importance on account of the appearances in smear. Orbital inoculations were made in two guinea-pigs with the organism growth in bouillon, but the meninges gave no sign of lesion.

It seems probable that this organism belongs in a group related with the meningococcus, with which it corresponds in most particulars. But the peculiar abscess-production in several organs, which we are inclined to attribute to it, may serve to throw doubt on its meningococcal character. It is possible that the organism is a secondary invader in lesions produced in some other way.

We are inclined, however, to identify this organism with the micrococcus catarrhalis.

The *micrococcus catarrhalis* was cultivated, first probably by Kirchner,[2] in 1890, but cultivated and first named by R. Pfeiffer (oral communication to Frosch and Kolle[3]). Pfeiffer regards the organism as nearly related to the staphylocci, but as distinguishable therefrom as Gram-negative and as non-liquefying with gelatine.

In practise the micrococcus catarrhalis has proved to be harder to distinguish from the meningococcus and the gonococcus, sharing with them the Gram-negative staining and the frequent intracellular occurrence, as well as numerous other characters. Ghon and H. Pfeiffer, 1902, working in Weichselbaum's laboratory,[4] insist that, though the three organisms form a separate group among micrococci, they nevertheless belong to three separate species. The M. catarrhalis is the least pathogenic in man, and, under saprophytic conditions, grows more profusely and exhibits more vitality than the meningococcus or the gonococcus.

As a matter of diagnosis, the cultural growth of the gonococcus is distinctive enough. The meningococcus colonies are said by Ghon and Pfeiffer to be a little moister and grayer, more finely granular, as well as always less profuse than catarrhalis colonies. The catarrhalis still grows at temperature less than 20° C. The larger size of individual cocci of the catarrhalis species is said to form another constant feature as against micrococci.

The localization of the M. catarrhalis in man is usually respiratory. The most frequent association is probably that with bronchopneumonia in children. Ghon and Pfeiffer found it 81 times in 132 cases of lung disease. In one case they found this organism alone, in 5 others in highly predominant numbers. Petruschky[5] found the organism in a case of typhoid fever associated with B. typhosus in the spleen, but in pure culture in the liver, kidney, and heart's blood. Weichselbaum[6] reckons this organism as of some importance in bronchopneumonia, but probably as an associated organism.

We have not yet found special statements concerning the association of M. catarrhalis with bronchiectatic lung conditions.

IV. HISTOLOGY.

The microscopic examination of the organs of the trunk gave the following results:

Heart not remarkable. Coronary branches thickened.

Lung. — It is difficult to demonstrate satisfactorily the bronchiectatic origin of the abscesses, since the bronchial mucosa has been largely destroyed in the process of abscess-formation. This is especially true in blocks from the central and posterior portion of the lung, where the diagnosis seemed grossly most assured.

Recent purulent processes are also found throughout, with extensive masses of bacteria, both cocci and bacilli. The largest masses are coccal.

In places acute pleuritis.

Spleen. — The abscess is walled by leucocytes only, imbedded in a rather coarse fibrin. Extraordinary numbers of delicate bacilli occur within the abscess and have multiplied largely outside the leucocyte bodies. Outside the abscess wall are numerous deeply staining fragments suggesting bacteria, and among these a few characteristic slender bacilli. Polynuclear leucocytes are rare outside the abscess. Numerous plasma cells are found throughout the pulp. The Malpighian bodies are only slightly active.

Liver. — Slight periportal cellular cirrhosis. The fatty change is moderate and largely remote from portal spaces.

Pancreas. Slight chronic interstitial process.

Kidney. — The abscesses here are recent and with well-defined reaction of surrounding fixed tissues. In cells and between cells in the interior of the abscess are great numbers of minute organisms in pairs, resembling those of the brain abscesses.

Adrenal. — Medulla contains several lymphocyte foci. In the fat tissue around one adrenal there is considerable hemorrhage. Among the blood corpuscles are numerous bacteria. Several large colonies of bacteria with greenish pigment masses included are found in one place.

Cerebral cortex. — The suspicious findings in the cerebrospinal fluid led to an unusually careful search for cortical cell-pictures characteristic of general paresis of the insane.

The result of this search shows that the cerebral cortex of this case is certainly not normal, but that the pictures are far removed from those seen in general paresis.

The cortex is abnormal in several respects. Besides the coarse abscesses mentioned in the gross description, and some smaller ones found on microscopic examination, there is a certain degree of rather active subpial gliosis and a variable reduction in the number of nerve cells in the outer layers. But focal and irregular losses of nerve cells and intracortical perivascular infiltration with mononuclear cells are conspicuous by their absence.

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[2] Kirchner: Bacteriologische Untersuchungen uber Influenza. Zeitschr. fur Hyg., 1890, Bd. 9, S. 528.

[3] Frosch und Kolle. Mikrokokkus catarrhalis (Kokkus bei infektiöser Bronchitis). Flügge's Mikro-organismen, 2896, Bd. 2, S. 154.

[4] Ghon und H. Pfeiffer: Der Micrococcus catarrhalis (R. Pfeiffer) als Krankheitserreger. Zeitschr. für klin. med., 1902, Bd. 44, S. 262.

[5] Petruschky: Krankheitserreger und Krankheitsbild. Zeitschr. für Hyg., 1901, Bd. 36, S. 154.

[6] Weichselbaum: Diplococcus pneumoniæ und andere bei entzündlichen Lungenaffektionen gefundun Bakterien. Kolle, u. Wassermann, Pathogene Mikro-organismen, 1903, Bd. 3, S. 234.

There is a greater degree of subpial gliosis at the sulcal bottoms than over the crowns of gyri. The cells of the layer of small pyramids and to some extent those of the layer of medium-sized pyramids have suffered atrophy in some regions along the walls of the sulci, but except in the right temporal region, in no instance was this condition found above the lips of the sulci.

The cortex of the *right temporal region* will be especially described because we can very probably date its peculiar features precisely, that is, back to February, 1903, when patient shot himself in the head four years and nine months before his death. A cross-section of the right superior temporal gyrus, opposite the point of impact of the bullet, shows a singular atrophy with maintenance of cortical depth. If this atrophy can be related with the old concussion (which seems indicated by the brown spots of limited size beneath the site of the imbedded bullet), it is interesting that the outer layers are scarcely more affected than the inner layers. The maximal cell loss is probably that of the layer of medium-sized pyramids. This layer is in places almost nerve-cell-free, but never quite so, so that a senile atrophic condition is imitated rather than an arteriosclerotic atrophy. Both the layer of small pyramids and the stellate cell layer show a considerable diffuse thinning out of cells. The larger pyramids are somewhat better maintained. There is considerable subpial and medullary gliosis.

DISCUSSION.

We have presented the case of an American youth of average capacity, a chair-maker for some six years, who became insane (depressed, paranoid, suicidal, later at times katatonic) after facial disfigurement in a Fourth of July accident at the age of twenty-five. We were tempted to a more particular study of this case because of the clear-cut features of an autopsy five years after onset (chronic and acute lung disease with abscesses, multiple abscesses of other organs including the brain), which seemed to point to bronchiectases and lung disease of ancient date.

The clinical history and the autopsy findings are so far consistent that a "psychogenic" origin for this case of (possibly) dementia precox can be safely discounted. It seems safe to conclude that the lung disease was already in process of production in the six months subsequent to the episode of facial disfigurement. It is possible that this disease antedated the facial injury and that masses of bacteria in dilated bronchi had begun to affect the patient long before frank pulmonary signs set in.

However this may be, the lung disease, whose progress was carefully followed on account of its clinical resemblance to pulmonary tuberculosis, had a peculiar effect upon the course of the mental symptoms. Both lung disease and mental disease came in attacks, but these attacks did not coincide in time.

The lung disease would affect in each attack a fresh area and was characterized by exhaustion, bloody and purulent expectoration (no tubercle bacilli) and high fever.

During the toxemic phases of the lung disease the patient was quiet, but would yield depressive delusions on questioning. Just as earlier the patient had been depressed ostensibly on account of his disfigurement, so throughout his disease he tended to delusions concerning his somatic condition. ("This is leprosy I am spitting up.") But his delusions were at all times of wider range than his bodily disease ("given up by God," "world is degenerating," "murdering the whole world"), and were sometimes of extreme metaphysical ingenuity ("passed both ends of the world and got behind everybody").

After some years the paranoid picture had become emphasized by mild and episodic katatonic features (wild beast simulations, mannerisms and peculiar contortions).

It is, of course, possible that the lung disease and the mental disease are merely interpenetrating entities in this case. The autopsy showed that the brain, in common with the kidneys and the spleen and other structures, had undergone abscess-formation. There is, however, no evidence that the brain abscesses were of long standing, and, though the fatal issue was pyemic, it is probable that previous attacks had been merely toxemic, or at most mildly septicemic. The micro-organism engaged in the abscess-formation is not in all respects well-defined, but seems to belong to the *micrococcus catarrhalis* group. There is no convincing evidence that this organism was in any way responsible for the clinical features of the disease as a whole. But it seems not easy to exclude, in a more general way, the presumably highly toxic masses of bacteria and detritus in the pulmonary tissues from the field of factors in the mental disease.

Just as it has long been suspected by some workers that there is a somewhat close relation between lung disease and brain disease (and, in particular, between bronchiectases and brain abscesses), so there may possibly obtain a more delicate and elusive connection between toxic lung conditions and brain conditions. It would be of extreme value could we learn more precisely the paths taken by bacteria and toxins from the lungs to the central nervous axis.

MORRIS'S POINT OF TENDERNESS AS AN AID IN DIAGNOSIS.

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In the *Journal of the American Medical Association* for Jan. 25, 1908, Dr. Robert T. Morris makes the following statements in an article entitled, "McBurney's Point and Another Point in Appendix Diagnosis." In order to make what I have to say clear I must quote at first largely from Morris's paper: "Instead of going out on the line to a point an inch and a half from the anterior superior spine of the ilium, come back on the line to a point situated an inch and a half from the navel. Here we find another tender point of definite diagnostic value. . . .

The point here described has reference to the right lumbar ganglia of the sympathetic nervous system, and notable tenderness of these ganglia has a diagnostic value which may briefly be placed in classification under the following heads; the statements are to be taken as general ones:

"1. In the early stages of an acute infective process of the appendix, the right lumbar ganglia are tender and the left are not. [The left he describes as lying in a corresponding position to the left of the umbilicus.] Under these circumstances the point here described is of secondary importance.

"2. *a.* When an acute inflammatory process of the appendix has subsided, . . . there may be no tenderness at McBurney's point, but there is tenderness at the point here described and no tenderness at the point of the left lumbar ganglia.

"*b.* When the appendix is undergoing a normal involution process . . . there may be no tenderness at McBurney's point, but there is persistent tenderness at the point here described. There is no tenderness at the point of the left lumbar ganglia.

"*c.* When the appendix is congested without the presence of infection . . . there may be little or no tenderness at McBurney's point, but there is persistent tenderness at the point here described. There is no tenderness at the point of the left lumbar ganglia. . . . To recapitulate: A patient comes in with the appendix in the form of a question mark. Right lumbar ganglia tender alone, appendix trouble. Right and left lumbar ganglia tender together, pelvic trouble. Neither right nor left lumbar ganglia tender, trouble somewhere cephalad from pelvis and appendix."

From a perusal of the above statement it would seem that the differential diagnosis between inflammatory processes in the abdomen might be much simplified by the examination of this magic point. Morris unfortunately cites no definite cases as proof of the correctness of his statements. In order to satisfy myself of the imporance of this point I have kept notes on cases of appendicitis, both in hospital and private work. No cases have been put into the series which were not operated upon, so that the exact condition is known in all, and in many there has been a pathological report as well as a clinical.

Before tabulating my results and expressing my own conviction about the diagnostic importance on this point, it seems to me well to consider for a moment whether it is the ganglia of the sympathetic nervous system which become secondarily tender in the way described. I think that Dr. Morris noticed the fact that there was tenderness at this point in certain cases, and ascribed it to the nervous system without much thought. If an extremity becomes infected it is not the nervous system which secondarily causes tender points, but the lymphatic glands. A septic finger is followed by an enlarged and tender gland at the elbow or in the axilla, an alveolar abscess by a gland under the jaw, etc., etc., *ad infinitum.* No one will dispute this. Why, now, do the points secondarily tender to an affection in the appendix or pelvis lie in the sympathetic system when their presence in the lymphatic system would bring them in the same situation and be more in accord with the working of nature in other parts of the body? An examination of the distribution of the lymphatic glands which drain the pelvis, appendix and gall bladder will show the glands secondarily infected would lie at the points described by Dr. Morris. It seems to me that he has gone too far afield for the explanation of an observed fact which he might have found much nearer at hand.

The lymphatics of the appendix and cecum are described by Jamieson and Dobson in the *Lancet* for April 27, 1907. "The lymphatic plexus of the appendix may be divided into three layers, superficial, middle, and deep, lying respectively under the peritoneum, under the circular muscular coat, and under the muscularis mucosa. Each layer consists of a capillary plexus draining into larger collecting vessels, which issue from the wall of the organ at the attachment of the meso-appendix. . . . There is not only free communication between the various systems of plexuses, but also between one part of a plexus and another. The lymphatic vessels which issue from the appendix divide themselves into three sets. The first set consists of the vessels which drain the organ from its tip to near its root; the other two sets are formed by the vessels which arise from the root. . . . Leaving the wall of the appendix they enter the meso-appendix and ascend between its layers with the branches of the appendicular artery, around which they form a leash of from four to six vessels. These accompany the artery to its origin, where they meet the lower group of the main ileo-colic chain. Many of them end in the glands of this group; others, however, ascend to the glands of the upper group, in which they end at variable levels. In some cases a gland in front of the duodenum is seen to be infected by vessels running directly from the appendix. . . . The presence or absence of glands in the meso-appendix is a matter of the slightest importance in view of the fact that these glands, even when present, do not intercept more than a few of the appendicular lymphatics. It is of importance, and it is the point to which we wish to draw attention, that lymphatic vessels from any part of the appendix, root, body, tip, run past the glands in the vicinity of the organ to glands of the main ileo-colic chain, reaching even those members of the upper group which lie on the duodenum. . . . Acute inflammation of the glands of the ileo-colic chain in cases of appendicitis is possibly more common than generally recognized, although it is rare for suppuration to occur. Quenu states that it is common in cases of fulminating appendicitis to find the glands of the chain enlarged and inflamed, and he believes that the presence of a tender area reaching from the iliac fossa upwards and inwards towards the middle line is an indication of glandular inflammation and affords some guidance as to the severity of the infection. (The tenderness described by Morris has therefore been observed by others.) Ricard and Bloodgood report cases where suppuration did occur."

This then proves that the lymphatic glands are secondarily involved in an infection of the appendix and that those most commonly affected run obliquely upwards from the appendix to the median line and may reach as high as the duodenum. The Handbuch der Topographische Anatomie, Merkel, gives the lower angle of the duodenum as lying at the level of the third lumbar vertebra, over which it passes. It may reach to the fourth or fifth. Deaver says that the transverse portion passes obliquely across the vertebral column at the third lumbar vertebra. Now to compare this position with the point of Dr. Morris the position of the umbilicus must be defined. Deaver says that its position depends somewhat on the pendency of the abdominal wall. It is opposite the third lumbar vertebra, or the disk, between the third and fourth. Morris states that his point is a little below the level of the navel while that of the glands seems to lie a trifle higher, not such a difference, however, as to be of any consequence when marked on so movable a thing as the abdominal wall. Clinically, therefore, I think it is proper to consider these points identical. The lymphatics, therefore, of the appendix lie to the right of the umbilicus.

The lymphatics of the pelvic organs are described by Poirier, Cuneo and Delamere. The lymphatics of the ovary resolve themselves into four, five or six trunks, which accompany the ovarian vessels, run with them under the peritoneum, pass in front of the common iliac vessels, cross the ureter and terminate in the lumbo-aortic glands of the corresponding side. In this ascending course the lymphatics of the ovary unite with those coming from the fundus of the uterus and Fallopian tubes. At first they are only placed next to them, but at the level of the fifth lumbar vertebra they begin to anastomose with them. The lymphatics of the tubes unite with those of the ovary and uterus and share with them their mode of termination in the two lateral chains of the abdomino-aortic group.

The lymphatics of the uterus run upward with those of the ovary and cross the ureter on its anterior surface and descend upon the juxta-aortic glands of the corresponding side at about the level of the hilus of the kidney. Some of them may end in the pre-aortic group.

The lymphatics of the ovary, tube and uterus run together, anastomosing more or less freely to glands which lie in close relation to the aorta on each side. Here, then, is a cross anastomosis. The topmost gland of the series, it will be noticed, lies high in relation to the kidney. Those lower down, however, would be the first to receive any infection coming from the pelvis. The tender points, therefore, might well lie at a lower level, which would make them appear on the wall in the neighborhood of the umbilicus.

The lymphatics of the gall bladder and common bile duct have, according to Piersol, their origin in two networks, one of which is situated in the mucosa and the other in the muscular coat. Efferents from both networks pass to the surface to form a superficial network from which collecting streams pass, — in the case of the gall bladder to the nodes situated in the transverse fissure, and in the case of the duct for the most part in a chain of nodes belonging to the hepatic group which lies in the gastro-hepatic omentum. The destination of the vessels from the lobes in the transverse fissure is along the inferior cava and the under surface of the diaphragm. The glands, therefore, that drain the gall bladder lie high up in the epigastrium.

To turn now to the practical clinical bearing of these lymphatic glands. In cases of acute appendicitis the position of the primary tenderness is so much more important as an aid to the diagnosis than that of the secondary that the latter is of slight consequence. It is at times hard to decide whether tenderness is present or not over Morris's point, since the tenderness over McBurney's point is so widespread and Morris's point lies too near to be differentiated. In all of the cases of acute appendicitis, although few were examined, tenderness was present over Morris's point. Soon appreciating its slight diagnostic value, I ceased examining these acute cases for this point.

In cases of chronic appendicitis the presence of such a tender point as described by Dr. Morris would be at times of great assistance in determining the diagnosis. It was, therefore, to these cases that I gave the most attention. Of the 23 cases examined there was no tenderness over Morris's or McBurney's point in four. Tenderness was present over McBurney's point alone in 4, and over Morris's point alone in 2. In 13 cases both points were tender, equally in 2, greater over Morris's point in 7, and greater over McBurney's point in 3, not stated in 1.

Since these cases of so-called chronic appendicitis are at times very difficult to diagnose from the physical examination, I shall report 2 of them in slight detail.

Mrs. Y. Six years dull burning ache in right side. Side sore to the touch most of the time. Examination: Tenderness, slight over appendix region, most marked at Morris's point, occasionally present over gall bladder. Operation seven days later. Appendix of moderate length, adherent its whole length except distal one-half inch. Here a constriction.

Mrs. F. A. F. Grumbling for years in right side. Yesterday sharp stomach ache with pain localizing in right iliac fossa. Examination: No increase in temperature. Tenderness over Morris's point and none elsewhere. Operation 22 days later. Appendix found with recent adhesions between it and its mesentery. "Subacute inflammation" by microscopic examination.

No advantage can be gained by reporting many of the cases in which no tenderness was present at the point under consideration except to show the type of case, which clinically sees an exact counterpart with that in which tenderness was present.

Miss K. H. Day before abdominal pain centering on the right. No increase in pulse-rate or temperature. McBurney's point tender. No tenderness elsewhere. Operation ten days later. Appendix injected and full, stricture near base.

Mrs. C. Two attacks appendicitis, last one three weeks previous. No tenderness anywhere on examination. Appendix found with adhesions to its mesentery.

Mrs. S. Recurring attacks of pain, localizing on right. Slightly tender mass in region of appendix. No other tenderness. Operation showed mass to be omentum and intestines adherent to appendix. Pathological diagnosis: "Chronic appendicitis."

Although no series of cases was examined to determine the presence or absence of tenderness at Morris's point in conditions other than appendicitis, it is well to mention a case of tuberculosis of the kidney in which tenderness was present over Morris's point. In cases of chronic appendicitis, therefore, tenderness over Morris's point seems to be fairly constant though not always present. Since the tenderness at the point in question is due to a tender lymph gland, which has drained the region of the appendix, there is nothing absolutely diagnostic in its presence. Inasmuch as appendicitis is by far the most common condition of those occurring in the right iliac fossa, tenderness over Morris's point alone is very suggestive and when combined with tenderness over McBurney's point points almost surely to the appendix as the diseased organ. Its presence is not, however, an absolute proof of appendicitis.

The pelvic conditions operated upon have been so complex in the few cases recorded that it is not proper to tabulate them. They include acute processes starting up in chronically inflamed tubes, extra-uterine pregnancies alone and combined with chronic salpingitis and chronic appendicitis. The cases have been too complex to warrant any conclusions.

In all the cases (six) of gall-bladder surgery there was no tenderness below the umbilicus. The series includes gall stones, cancer, inspissated bile, adhesions from gall bladder and liver.

CONCLUSIONS.

The abdominal lymphatic glands, becoming secondarily inflamed, cause tender areas. The area found tender on examination is somewhat of a guide to the organ primarily infected, and, therefore, in certain cases may be an aid in differential diagnosis.

In acute appendicitis tenderness at Morris's point is of less importance than the symptoms caused by the appendix itself.

In chronic appendicitis tenderness at Morris's point may be of distinct diagnostic value. Tenderness at this point, even though the only physical sign, makes the diagnosis of appendicitis by the rule of chance probable; when combined with enderness at McBurney's point, the diagnosis becomes more certain. Its absence does not rule out appendicitis, and it may occur in other conditions.

The point has by no means the importance given to it by Dr. Morris.

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Clinical Department.

EARLY CERVICAL LYMPH NODE ENLARGEMENT, THE SOLE SIGN OF CARCINOMA OF THE ESOPHAGUS. REPORT OF A CASE.

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THE following report is made, not because of its being such a rare condition, but for the reason that it may possibly be of benefit to the practitioner or surgeon who has never seen this condition or who has forgotten, in diagnosing enlargements of the cervical lymph nodes.

Patient, T. C. T., on Sept. 24, 1907, was admitted to the hospital and gave the following history: Age thirty-eight, American, farmer. Father and mother dead. Thinks father died of abscess of the liver at fifty years. Mother died at the age of fifty-five years; was sick a week or ten days; the cause of death was given as inflammation of the bowels. Patient has four brothers and one sister living, all in good health. Some brothers and sisters died in infancy. One uncle dead from tuberculosis. Patient has had usual diseases of childhood. Said he had scrofula when a child but no glands suppurated. He has had stomach trouble for years. Last year patient had what the doctors called malarial fever. He was free from it at times but has been "no account," as the patient expresses himself, since then. Has been losing flesh, but his appetite remains good.

Examination. — Patient has good color, no cachexia, and on inspection appears normal except has marked nodular enlargements on left side of neck along the sterno-mastoid muscle and some nodular enlargement on the right side. Skin freely movable. Patient first noticed enlargements on left side about May 1. Says enlargements on the right side have diminished. Patient complains of pain in the nodules, which radiates to the top of his head. No sores or scales on his face or neck, but the skin over the tumor masses is hyperemic. Nothing was found on inspection of the mouth, nose or throat. Patient remained in the hospital four days, temperature ranging from normal to 99°. A diagnosis of cervical adenitis was made. He was unimproved when discharged.

The patient again made application for admission to the hospital on Dec. 4, 1907. Patient gave same history except that when he swallows, a lump seems to come back up in his esophagus.

Physical examination. — Throat and nose negative.

Lungs. — Vocal fremitus normal. Percussion note on right upper back duller than on left. Remaining portion of back normal. On moderate or deep inspiration, a fairly large number of moist râles. Left upper back a number of fine râles. Front clear.

Heart. — Slight systolic murmur, percussion normal.

Blood. — White, 8,000.

Urine examination. — Dark straw color. Specific gravity, 1,020, acid, trace of albumin, few granular casts and epithelial cells.

Temperature ranges from normal to 100.

Patient complains of pain in the nodular enlargement and of headache. The nodules have a springy feel, as though pus were present in the deeper portions. The nodules are considerably larger than they were when patient was in the hospital in September.

Bacteriological report. — After a half hour's search one tubercle bacillus was found in the sputum.

A diagnosis was made by exclusion. The diseases taken into consideration were the following: Tuberculosis, syphilis, Hodgkin's disease, carcinoma or sarcoma.

Tuberculosis. — For the support of this the following was found:

1. Slow growth of the nodules. 2. History of scrofula. 3. Râles and dulled note on auscultation and percussion. 4. Daily temperature, higher in the afternoon. 5. Gradual loss of flesh and weakness. 6. Finding of one tubercle bacillus in the sputum. 7. Patient's statement of decrease in size of nodules.

Syphilis. — Patient gave no history of infection nor other signs or symptoms of syphilis.

Hodgkin's disease. — This disease was taken into consideration because of the localized enlargement of the lymph nodes but was discarded because of the inflammatory condition and lack of hyperplasia of lymph tissue elsewhere.

Carcinoma. — As there was no history of any sore or scaly conditions on the face or any other place on the skin or in the mouth, nose or throat, nor history of any marked involvement of the esophagus or stomach, carcinoma was dismissed. Lymphosarcoma was considered but was dismissed because of the many inflammatory signs and numerous signs and symptoms of tuberculosis.

Diagnosis. — Tuberculous adenitis. On Dec. 4, the patient was anesthetized and the following operation performed: An incision about five inches in length was made over the posterior border of the sternomastoid muscle and the skin and fascia divided. A large nodule presented which was removed by dry dissection. Other nodules that were adherent and encapsulated were removed through this incision. A very large nodule was removed through an incision parallel to the first and anterior to it in front of the sternomastoid. The incisions were closed; small iodoform gauze drains were inserted at the lower angles of the wounds.

Pathological examination. — Report from Dr. W. McN. Miller. Several nodular masses varying in size from a pea to a hen's egg, quite firm and homogeneous throughout, except the largest which shows slight necrosis in the center. Microscopical sections from several of the nodular masses were taken and each shows typical carcinomatous structure.

Pathological diagnosis. — Carcinoma of lymph nodes metastatic, most probably from the esophagus.

The patient was dismissed from the hospital Dec. 17, 1907, improved as to pain and local symptoms; but the wound was not healed and general condition was no better. After leaving the hospital the patient developed a cachexia and in about two and a half months began to vomit blood and have difficulty in swallowing. Other nodules developed in the cervical region and on the right side of the chest about the level of the tenth rib. Pain in the region of the liver. From then until Aug. 11, 1908, the time of death, the patient spent most of his time in bed. Unfortunately a necropsy was not held, but the later symptoms plainly show the primary carcinoma to have its origin in the esophagus, or possibly the stomach.

In order to make the above case clearer to the reader, I quote the following two cases from Kaufmann:[1] "In many cases the cervical lymph nodes and the connective tissue of the neck are enormously infiltrated with cancer. It is of diagnostic importance that cancerous lymph node infiltration, which rapidly extends to surrounding soft parts, may lead to the severest stenosis of the superior portion of the esophagus, even long before any manifestation of stenosis attributable to the tumor itself may be observed. Two examples suffice to illustrate:

"Robust man of fifty years, four months before observed a nodule on the right side of neck which rapidly increased in size. Six weeks thereafter a huge tumor which, on both sides, extended from the angles of the jaw to the clavicles. Hoarseness. Eight weeks thereafter death with symptoms of infection. Necropsy: carcinoma of the esophagus in the middle portion, 4 cm. in extent, without stenosis; numerous perforations into the bronchi; penetration of both jugulars by lymph nodes; no pulmonary metastases; numerous metastases in the serosa peritonei; growth of tumor about both recurrent laryngeal nerves. Death from edema of the glottis."

"Of greater interest is the second case. A young woman of twenty-one years. A tumor the size of the fist on the left side of the neck, adherent to the vessels. Operation: Extirpation of tumor with vessels and vagus. Microscopic examination: carcinoma. First at the necropsy was observed as primary tumor a macroscopically scarcely observable, quite flat, ulcerating carcinoma surrounded by a low wall, in the uppermost part of the esophagus. Microscopical: clearly corneous cancer. This case is also of interest because of the youthful age."

CONCLUSIONS.

From the case reported and the cases cited, one should remember:

That any enlargement of the cervical lymph nodes in the adult should be regarded with suspicion as to malignant tumors. That metastases may prove to be the more malignant. That the primary carcinoma may not give signs or symptoms until late in its course.

That the primary growth may never give signs or symptoms and be discovered only at the necropsy.

One should be impressed with the importance of routine pathological examination.

Medical Progress.

PROGRESS IN THE THEORY AND PRACTICE OF MEDICINE.

DISEASES OF THE HEART.

BY FRANCIS W. PALFREY, M.D., BOSTON, MASS.

(Concluded from No. 26, p. 870.)

ARRHYTHMIAS AND ALLIED DISORDERS OF FUNCTION.

The subjects covered in these studies are numerous and varied, but in general the chief attention has been devoted to the muscular activities of the heart. The valvular disorders have long been comparatively well understood, but the disorders of function of the cardiac muscles have always been and still are much more obscure. Anatomically we have no adequate explanation for these disorders; although toxic and reflex influences have been suggested, these are still beyond our powers of proof. But whatever may be the causes of abnormal muscular action, our newer methods of investigation give us new power to determine in clinical cases the actions of different parts of the heart in their mutual relations and their variations from the normal. The arterial sphygmogram records the efficient contractions of the left ventricle. The cardiogram records all contractions of the ventricles, even the inefficient. The venous pulse tracing records beats of the right auricle. The esophageal cardiograph of Minkowski,[38] used also by Joachim,[39] by Janowski,[40] by Rautenberg[41] and by Young and Hewlett,[42] has given evidence as to the pulsations of the left auricle. The radioscope reveals pulsations both of auricles and ventricles. Blood pressure determinations and calculations from them of the ventricular output per beat and per second have been described. With these methods at command, it is to be expected that the heart's action, normal and abnormal, should be subjected to close scrutiny.

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[1] Lehrbuch der speziellen pathologischen Anatomie, dritte Auflage, Berlin, 1904, s. 365.

Foremost among the problems studied has been that of cardiac arrhythmias. Here naturally Wenckebach's influence is strongly felt. Most writers, however, have approached the problem more from the clinical and less from the physiological viewpoint than did Wenckebach, attempting rather to classify the commoner types according to clinical similarity than to trace them back to corresponding experimental phenomena. To Hering[43] we owe the classification of the chief cardiac arrhythmias which is now most commonly cited. This classification includes five groups as follows:

1. Respiratory arrhythmias.
2. Arrhythmias from extrasystoles.
3. Perpetual (" absolute ") arrhythmia.
4. Arrhythmias from heart block.
5. Pulsus alternans.

This classification has been in all essentials confirmed by Pletnow,[44] Hoffman,[45] Ortner,[46] Hirschfelder,[47] Hewlett,[48] Norris[49] and other recent writers. There is still some dispute both as to the mutual relations of these groups and as to the possibility of subordinate groups within these chief divisions, but until a better classification is proved this one is of service at least as an improvement upon the state of chaos which previously existed.

The respiratory arrhythmias are those in which the irregularity bears a relation to respiration or similar influences. They recur chiefly in children and in neurasthenics and have nothing to do with disease of the heart. They are undoubtedly due to vagus nerve influences, since atropin causes them to disappear. In them there is no disturbance of the action of the heart beyond changes in rate, due to nerve control. They are practically of no clinical importance and have, therefore, received little attention beyond the recognition of their existence. Hirschfelder[47] has published tracings illustrating the type.

The second form, arrhythmias due to extrasystoles, has received much more attention. Extrasystoles, as Wenckebach pointed out, are contractions of the heart in every way similar to contractions obtained experimentally in animals by artificial stimulation of the heart. They may occur at any time in the cardiac cycle except in the short " refractory phase " which immediately follows any contraction, and when they occur they themselves set up a " refractory phase " which prevents the occurrence of the next normal contraction, so that the tracing of the apex shows two beats in more or less close succession followed by a pause of such duration that the second following beat takes place at the time at which it would have done if the extrasystole had not occurred. On auscultation one hears in case of a single extrasystole after two normal beats the following: lub dup — lub dup — lub dup, lub dup — — lub dup. This phenomenon is frequently encountered in auscultation and is perhaps the most frequent cause of arrhythmia. The causes of extrasystoles are still obscure. They occur more frequently in old age than in youth, but are not definitely associated with any discoverable lesions of the heart. Increase of irritability of the heart muscle has been suggested. Increased resistance to the arterial circulation in animals has been shown to cause extrasystoles,[2] but this cannot be accepted as the invariable cause in man. Digitalis poisoning may cause extrasystoles.[2] Toxic and reflex influences have been suggested, but the problem remains unsolved.

Just as in the heart of the experimental animal stimulated by the electric needles, the extra contraction may originate at any point, whether in auricle or ventricle, where stimulation is applied, so in man extrasystoles may originate at various points in the heart. By the time of the auricular wave in venous tracings it can be determined that extrasystoles may originate in ventricle, in auricle, in region of the auriculo-ventricular bundle of His or in the region of the mouths of the great veins.

In the past two years special studies of extrasystoles have been made by Rautenberg,[41] by means of his esophageal tracings; by Ortner,[46] who has demonstrated that they may be caused by nerve influences, and by Hochhaus[50] with chief attention to extra contractions too weak to cause a radial pulse.

Perpetual arrhythmia has been discussed by Mackenzie,[33] Mackenzie and Morrow,[51] Theopold,[52] Bonniger[34] and Hewlett.[53] These authors are all in agreement that in this condition of " absolute irregularity " the stimulus to contraction originates not in the normal position at the mouths of the great veins, but in the region of the bundle of His between auricles and ventricles. Mackenzie first came to this conclusion from the disappearance as the arrhythmia set in of the auricular wave in the jugular pulse, showing that the auricle had ceased to contract at its normal time before the ventricle. He concluded that the auricle was either paralyzed or that it contracted simultaneously with the ventricle. That the former of these alternatives may occur he argues from the fact that in autopsies on such cases the auricles were found so dilated that loss of all function seemed probable. Bonniger has shown that the second alternative is possible, that auricles and ventricles may contract simultaneously, since he has seen them do so during radioscopic examination.

Heart block, the fourth form of disturbance of cardiac rhythm, has attracted much attention since in 1905 it was shown by Erlanger [36] to be the cause of the condition known clinically as the Stokes-Adams syndrome. This condition, characterized by permanent slow pulse associated with syncopal or epileptiform attacks,* was first described by Adams [54] early in the last century and further discussed by Stokes [55] twenty years later, with the additional observation that cases of this disease showed pulsations in the neck of greater frequency than the arterial pulse. Mackenzie [1] and others more recently showed by tracings that these pulsations in the neck corresponded to contractions of the auricle. It was left for Erlanger, however, to draw the parallel between these cases and experimental animals in which heart block was produced by compression of the muscle bundle of His, Jr., which normally conducts the stimulus to contraction from the auricles to the ventricles. Erlanger's deductions were soon confirmed when Stengel,[57] later in 1905, reported an autopsy in a case of Stokes-Adams disease which revealed a sclerotic calcified lesion destroying the bundle of His.

Cases similar to that of Stengel rapidly multiplied. In 1906 autopsies showing similar lesions were reported by Gibson,[58] by Schmoll,[59] by Jellick, Cooper and Ophüls,[60] by Keith and Miller [61] and by Champan,[62] and in 1907 and 1908 fourteen articles [63] have been published in German, French and English literature describing 25 cases, in all of which, by tracings or by radioscopy, heart block has been demonstrated. Among these 25 cases 16 autopsies are reported, and all of these have shown lesions involving the bundle of His. It is not yet proved, however, as has been pointed out by Pearson [63] and by Lepine,[64] that heart block and the Stokes-Adams syndrome cannot occur without lesions of the bundle of His. Hewlett [65] has furthermore shown that it may be produced by digitalis poisoning. Another interesting observation of Hewlett's [66] which may be mentioned here is that blocking of auricular extrasystoles may occur not affecting the normal contractions.

It has further become probable that heart block at the bundle of His is not the only form of heart block which may occur. Erlanger and Blackman [10] have shown this experimentally in animals and Gibson and Ritchie [63] in a clinical case obtained evidence of pulsations in the veins at a rate greater than that of the auricles, the block being sino-auricular.

The pulsus alternans, the last fork of arrhythmia, an extremely rare condition, in which without abnormality in the time of contractions every second heart beat is weak so that the pulse is a regular alternation of larger and smaller beats, has received attention out of proportion to its clinical importance on account of Hering's [67] attempt to prove that in the weak beats only a part of the ventricle contracts, the remainder lying inactive. This theory, however, has not found general acceptance. It is, therefore, necessary to await further evidence. Von Tabora [68] has reported a case associated with extrasystoles.

These groups undoubtedly include practically all clinical arrhythmias. It may be that occasional cases stand outside of any of these groups, yet, as in a case reported by Cushny and Edmunds,[69] seeming to be due to irregular discharge of impulses, there is nothing to show that this may not be merely an atypical case belonging to a recognized class, in this instance probably a combination of groups 2 and 3.

A disorder which may well be considered in connection with the arrhythmias is paroxysmal tachycardia. F. Müller [70] considers it to be purely a neurosis. Schlesinger [71] considers it chiefly as a neurosis, but recognizes certain cases with etiology in the cardiac condition. Schmoll [72] has classified cases in four groups: (1) cases with previously damaged hearts, (2) cases due to dysthyreosis, (3) cases with disorders of the central nervous system and (4) cases of apparently functional character. Hirschfelder,[73] Hay,[74] Rihl [75] and Schmoll [72] have all published tracings showing during the paroxysm the ventricular form of venous pulse, confirming Mackenzie's [1] observation and agreeing with his theory that paroxysmal tachycardia is produced by a rapid series of extrasystoles originating in the region of the auriculo-ventricular function.

As a rule in paroxysmal tachycardia the heart although rapid is regular. Hornung,[76] however, has published four cases with tracings in which, in addition to the rapidity, there was irregularity of contractions.

Another subject upon which discussion has recently occurred is that of heart sounds in addition to the familiar first and second sounds. The existence of such sounds has long been recognized, especially as occurring in the so-called *bruit de gallop.* The third sound is recognized to occur in two varieties, the protodiastolic, soon after the second sound, and the presystolic, just before the first sound. Thayer [77] has discussed at length the first variety, the early diastolic sound, showing that it is to be heard in a considerable proportion of apparently normal hearts if the patient is examined lying on the left side. Thayer has also heard it in dogs with the heart exposed. The cause of the third sound is not yet proved. Thayer considers most probable a sudden tension of the mitral or tricuspid valves as they are forced open in early diastole. Pauinski [78] favors rather an exaggerated action of the auricle. Trautwein [79] suggests the possibility of non-simultaneous contraction of the two sides of the heart, a condition of hemisystole. The possibility of hemisystole has been supported by v. Leyden and Bessenge,[80] by Kraus and Nicolai [81] and by Hering.[67] Its proof, however, seems still inconclusive and at least its possibility as a cause of the early diastolic heart sound in all cases is excluded by its absence in Thayer's animal observations. The cause of the third heart sound and the mechanism of the *bruit de gallop* is, therefore, still undetermined. Yet it must be admitted that by this work our knowledge is increased in the recognition that the third heart sound is a phenomenon which may be not pathological, but physiological, and in the assurance that its cause in physiological and in pathological cases is being sought in newer and more searching methods.

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* In this connection it is of interest to note the observation of Munson [56] that before and during attacks of true epilepsy the heart action shows no abnormality.

TESTS OF CARDIAC FUNCTION AND BLOOD PRESSURE STUDIES.

Another subject to which much attention has been devoted of late has been the testing of cardiac efficiency. These are divided into two classes, the first comprising the simpler clinical methods of increasing the work of the heart and observing the results of the procedures, the second comprising the more complicated methods and calculations designed to measure the action of the heart considered as a pump according to the laws of hydraulics. These two classes of procedure differ in that the first aims to determine the reserve power of the heart, which may be drawn upon as demand arises, whereas the second class attempts simply to determine the work being done at any particular time.

Of the first class are the methods of Hertz,[82] of Graupner [83] and of Katzenstein.[84] The method of Hertz depends upon the behavior of the pulse rate after certain exercises of the arms. In normal cases the pulse rate is unaltered, whereas in cases of heart weakness the pulse becomes slower as a result of the procedure. Hertz [85] has recently described an apparatus for accurately measuring and grading the exercises used. Cabot and Bruce [86] employed this test and guardedly confirm it. The method of Graupner depends upon the behavior of the systolic blood pressure in consequence of exercise. The pressure is determined before and after exercises such as are used in the Nauheim treatment; in normal cases after the pulse has returned to its normal rate a rise of blood pressure occurs, whereas in cases of cardiac weakness this rise of blood pressure is delayed, diminished or entirely absent. Cabot and Bruce consider this test a method of value. Franze [87] also considers it the most reliable test now at our command. Katzenstein's test of cardiac function which has attracted more attention than the two preceding is performed as follows: After determination of the systolic blood pressure both femoral arteries are compressed at Poupart's ligament. In normal cases the blood pressure is said to be increased without increase in pulse rate, whereas in cases with weakened hearts this rise of pressure fails to occur. This method has been discussed by Lewy,[88] by Fellner and Rudinger,[89] by Hoke and Mende,[80] by Cabot and Bruce [86] and by Morandi.[91] Lewy considers the test liable to error in neurotic cases but of use in infectious and cardiac diseases. Fellner and Rudinger and Morandi in general confirm Katzenstein's claims. Cabot and Bruce in a few cases found that its application caused pain which vitiated the results. Hoke and Mende found the rise of pressure not constant in healthy persons, and although in some particulars they confirm Katzenstein's observations, they found his methods of little practical assistance. In certain cases of severe cardiac insufficiency the results were entirely misleading. Thus the test cannot be considered as established.

The clinical estimates of the work of the heart are based upon determination of diastolic as well as of systolic blood pressure and their difference, the "pulse pressure." The study of the diastolic pressure was formerly neglected on account of the lack of reliable instruments for its measurement. But since the publication in 1904 by Erlanger [92] of an instrument which would give reliable evidence as to the diastolic pressure, new calculations have become possible. Following Erlanger's principles a number of other instruments have been devised by v. Recklinghausen,[93] by Sahli,[94] by Munzer,[95] by Kozicskowsky,[96] by Gibson [97] and by Strauss.[98] Fellner [99] and Ettinger [100] have both used an ingenious simple method which the former by comparison with the results of the v. Recklinghausen instrument finds to be accurate. This method consists simply of auscultating the brachial artery at the elbow below the broad arm band of the v. Recklinghausen modification of the simple Riva Rocci sphygmomanometer, while the pressure is gradually relaxed. As the pulse returns after obliteration a murmur develops, increasing in intensity up to a certain point. The pressure at which the murmur is at its maximum is found to agree with the diastolic pressure. O. Müller [101] has reached similar results by a plethysmographic method.

Erlanger and Hooker,[102] followed by v. Recklinghausen [93] have proposed the product of pulse pressure (difference between systolic and diastolic pressures) and pulse-rate as a measure of the heart's work provided that the dilatability of the vessels remains constant. The element of dilatability or tonus of the arteries, however, is a variable factor which cannot be directly estimated. This, as shown by all who have studied the method, greatly vitiates its value. Hesse,[103] for instance, in its application to the study of normal persons during active exercise, has shown that in the early stages only frequence of pulse and the systolic pressure increase, and the formula probably holds true; but later, when the diastolic pressure also rises and the elasticity of the vessels decreases, the amplitude frequence product is no longer a reliable criterion. Klemperer,[104] Strassburger,[105] Fellner,[106] Tiedemann [107] and Hoepffner [108] have all come to the same conclusion in recognizing the error introduced by variable elasticity of the arteries. Strassburger illustrates this by the diminished elasticity of the arteries in old age, and Hoepffner by the diminished tonus in a case of collapse. Yet it is in general argued that in studying the variations in the circulation of individual cases from day to day, especially to determine the results of treatment, the variations in elasticity of the arteries is probably slight and that, therefore, the product of pulse pressure and pulse-rate as an index of the work of the heart is of distinct value.

PERICARDITIS AND ADHERENT PERICARDIUM.

Of the work reported upon the subject of pericarditis, the most important is that of Calvert [109] who has studied the position of the heart in pericarditis with effusion, the value in diagnosis of the cardio-hepatic angle [110] and the mechanism of the production of the pulsus paradoxus.[111] Calvert hardened the bodies of two patients dead with pericardial effusion so that on section the position of the heart could be determined. In one the heart was not collapsed, but distended with blood; in this case the heart lay immediately against the anterior thoracic wall. In the second case the heart was collapsed with little blood in its chambers; in this case the heart was displaced backward against the posterior wall of the pericardium. Calvert concluded that the position of the heart depends upon its compensation or ability to become distended with blood in diastole, and that when this fails the heart assumes a position of backward displacement. The cause of the *pulsus paradoxus* he attributes to compression of the venæ cavæ in inspiration. With regard to the significance of the obtuse cardio-hepatic angle Calvert shows that before this is taken as a positive sign of pericarditis with effusion cardiac dilatation from mitral disease, especially mitral stenosis, must be excluded, since this can give a similar outline of dullness.

In the treatment of pericarditis with effusion a suggestion which may be noted is that of Baginsky,[112] who advocates the use of mercurial inunctions and potassium iodide in acute rheumatic cases.

Chronic adhesive pericarditis has received attention chiefly on account of the results of surgical treatment by cardiolysis. Cases where this has been done are reported by Wenckebach,[113] by Danielsen [114] and by Ensgraber,[115] making a total of 10 successful cases.

VALVULAR DISEASES.

Advances in our knowledge of valvular diseases have occurred chiefly by the study of lesions produced artificially in animals. Stewart [116] has published evidence which, if confirmed, must revolutionize our conception of the pathological physiology of aortic insufficiency. He produced lesions of the aortic cusps in dogs after opening the thorax, and took volume tracings of the ventricles before and after the valve was rendered insufficient. Contrary to what would have been supposed, the results showed that little actual regurgitation of blood occurred; the systolic output, moreover, did not appreciably increase. Yet the arterial pulse presented the familiar characteristics of the water-hammer pulse — large volume with early and rapid fall to a low diastolic pressure. These peculiarities of the pulse Stewart [116] argues are due not to the back flow of the blood, but to a diminution of peripheral resistance which may occur reflexly as a result of the transference of pressure from the valves to the ventricle. To prove that the rapid fall of pressure is due to low peripheral resistance, he shows that, in cases of aortic insufficiency, if the upper arm is compressed slightly so as to interfere with the venous return, but not to a degree to equal even the diastolic arterial pressure, the radical pulse loses its water-hammer quality and returns to its normal form. This conception of what takes place in aortic insufficiency is so radical that it requires confirmation before it can be accepted; yet the character of the work is such that it carries much weight.

Thayer and MacCallum,[117] and Cushing and Branch [118] have described experimental studies upon valvular defects, the former with regard to the production of murmurs, the latter with reference to the possibilities of surgical treatment. Thayer and MacCallum found that in auscultation, with the chest laid open, the murmur of mitral insufficiency was transmitted with greatest intensity toward the left auricle, and explain the discrepancy between this finding and the ordinary clinical observation on the ground of the concealed position of the left auricle in man. In one instance, distinct aortic and mitral regurgitation was observed in dilatation without lesion of the valves.* Basic systolic murmurs similar to the so-called hemic murmurs were produced by the slightest pressure over the pulmonic valve or conus arteriosus. Cushing and Branch dealt chiefly with the possibility of surgical treatment of mitral stenosis. They showed that in dogs after such an interference operative recovery was possible, but were unable to obtain symptomatic improvement.

With the increased attention now paid to the venous pulse the tricuspid valve has of late come into prominence. Mackenzie,[1] Mackenzie and Morrow,[51] Crawfurd,[120] Griffith [121] and Herrick [122] have maintained that tricuspid disease is of more frequent occurrence than is recognized. According to Herrick, 187 cases of tricuspid stenosis have been reported, but in only 10 of these has the diagnosis been made clinically. The signs of tricuspid stenosis are described as follows: (1) a presystolic murmur (often absent) audible toward the lower part of the sternum; (2) marked extension of the cardiac dullness to the right; (3) marked distention of the veins of the neck and of liver with pulsation of the auricular type; (4) absence of accentuation of pulmonic second sounds. Crawfurd reports 6 cases and Herrick 1, all proved by autopsy.

Tricuspid insufficiency is of still greater interest as perhaps the chief cause of the ventricular, systolic or "positive" venous pulse. The ventricular venous pulse was formerly taken to be positive evidence of tricuspid regurgitation. But Bonniger [34] has shown that a systolic venous pulse may be caused by an abnormally timed contraction of the auricle, simultaneous with the ventricular contraction, and Hewlett [123] holds that a positive wave may be transmitted by pressure of the contracting ventricle upon a distended and paralyzed auricle. Thus especially in absolutely irregular hearts the positive venous pulse may not mean tricuspid insufficiency; this condition, however, is to be thought of in all cases with the positive venous pulse.

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* In opposition to this may be mentioned the work of Magnus-Alsleben [119] who was unable to produce dilatation sufficient to cause regurgitation.

Rihl [124] reports experimental studies upon the results of division of the tricuspid valves. He finds that extensive lesions of the valves produce a ventricular venous pulse; that slight lesions were followed by no modification of the normal venous pulse, but that when these cases with slight lesions were subjected to conditions which normally do not produce a ventricular venous pulse (stimulation of the vagus or slight suffocation) a ventricular venous pulse developed.

The importance of syphilis as a factor in the production of valvular disease has been discussed by Strümpell,[125] by Rogge and Müller,[126] and by Herzog.[127] Rogge and Müller found disease of the aortic valve in 15 out of 24 cases of tabes. Strümpell and Herzog both note the frequent occurrence of lesions of the aortic valve in tabes and consider these due to syphilis.

With regard to the congenital diseases of the heart, Abbott [128] has reported an important analysis of 400 cases proved by autopsy. The results are given in a comprehensive table including 26 classes of anomalies, showing post-mortem findings, clinical history and physical signs and other statistics. The most frequent conditions were defects of the interventricular septum, usually combined with other anomalies; next most common was patent foramen ovale. The duration of life was relatively long in uncomplicated defects of the interauricular septum, patent ductus arteriosus and pulmonary stenosis with closed interventricular septum. In pulmonary stenosis with deficient interventricular septum the duration of life was much shorter. The observations as to the hypertrophy of chambers and the occurrence of cyanosis, thrill and murmur are too numerous to repeat. One fact contrary to previous teachings which calls into question the reliability of the collected clinical records is that in some cases of pulmonary stenosis the pulmonary second sound was said to be accentuated.

A number of cases of congenital defect have been reported, notably Kehrer's [129] case of congenital absence of heart. Ohm [130] describes cases of open foramen ovale with paradoxical embolism.

The cardiac neuroses have been discussed in three notable papers by Müller,[70] Goldscheider [131] and Krehl, [132] but without important new contributions. The disorders classed as neuroses are still little understood.

DETERMINATION OF SIZE AND POSITION OF THE HEART.

Considerable attention has been devoted to methods of determining the true outlines of the heart both in the normal and in pathological positions. Moritz [133] has shown in a diagram how great may be the variations between the percussion outlines of the same heart as determined by a number of distinguished observers. Percussion, therefore, if it is still to be relied upon, must be practiced by more uniform and more accurate methods. The increasing perfection of radioscopic methods has furnished a means by which percussion outlines can be controlled and verified, especially by use of the orthodiagraph, by which the shadow of the heart upon the chest wall can be accurately recorded. Thus a number of observers, notably Moritz,[133] Dietlen [134] and Treupel [135] have made studies of series of cases, comparing different percussion methods and testing their accuracy. The simple heavy percussion used especially in Germany is little considered in view of Moritz's demonstration of its unreliability. The three chief methods compared are those of Goldscheider [136] and of Moritz [133] and the tactile percussion of Ebstein.[137] Goldscheider's percussion, often called " threshold percussion," is the lightest possible percussion, practiced, according to Goldscheider's last publication,[138] by using a rubber-tipped bent glass rod as pleximeter. Moritz obtains the most accurate outlines of the right border by means of moderately strong percussion applied while the patient is in the position of forced expiration; the left border he determines by somewhat lighter percussion during ordinary respiration. The tactile percussion is performed by attention partly or entirely to the sense of resistance to the pleximeter finger, which may be obtained by percussion so light as to be inaudible. Dietlen,[134] in a series of 270 cases, compared the results of percussion by Moritz's method with readings obtained by the orthodiagram taken immediately after with precautions against change of position, and found his percussion borders correct within ½ cm. with regard to the right border in 86%, with regard to the left border in 70%, with regard to the apex in 62% and with regard to the upper border in 65%. His diagrams, all of which are reproduced, all show a close relation between the percussion and radiographic outlines. This author also used the Goldscheider method in 50 cases for comparison, but while the two methods in general agreed, the Goldscheider method seemed a little less reliable. Treupel,[135] in 150 cases tested by all three methods controlled by the orthodiagram, allowing a variation of 1 cm., obtained correct determinations by Goldscheider's method of the right border in 97% and of the left border in 95%; by the Moritz method correct determinations were made of the right border in 87% and of the left border in 84%; by the Ebstein method the right border and the left border were both correct in 94%. Simons [139] applied Goldscheider's method in the cadaver and found its results almost absolutely exact. These observations seem to show that in outlining the heart light percussion is necessary unless, following Moritz, we insist upon a position of forced expiration in determining the right border.

The mobility of the heart has been discussed by Braun [140] and by Herz.[141] Braun describes the suspension of the heart from the aorta and other vessels at its base and shows that the degree of the mobility of the heart as a pendulum is variable and may be great. This is best determined by percussion of the right border as the patient is turned from the dorsal to the left lateral position. Normally the excursion is hardly 1 cm., but in abnormal cases it may be as great as 6 cm. in a case of elongation of the ascending aorta. Herz has similarly described the mobility of the heart and has attempted to show a connection between abnormal mobility and neurasthenia. He also mentions the possibility that hearts displaced upward and turned in a more transverse position by ascites or meteorism may be wrongly believed to be enlarged.

In the treatment of heart disease there has been of late a distinct tendency to lay greater stress upon physical and mechanical methods of treatment. In America this tendency has probably received a new impetus from the visit of Theodore Schott to this country in 1907, during which he delivered numerous lectures and published several papers in American journals[142] describing the Nauheim hydrotherapeutic methods. This treatment consists chiefly of effervescent baths and carefully graded exercises. Articles on the subject have been written by Bauer,[143] by Graham,[144] by Norris[145] and by Brown.[146] Selig[147] describes favorable results obtained by the use of vibratory massage of the heart. Jacob[148] reports encouraging results from Kaull's dietetic treatment as employed by Senhartz. This consists in limiting the diet to 200 ccm. of milk given four times a day for six days, after which the diet is gradually increased, the whole course of the treatment lasting a month; liquids are limited throughout. Gubb[149] and Enriquez and Ambard[150] have written in favor of the salt-free diet in cardio-renal disease. Hahn[151] and Deland[152] have urged a more frequent resort to venesection in circulatory disturbances, the former writing an interesting account of his sensations when the operation was performed on himself.

THERAPEUTICS.

The chief recent advance in the drug treatment of heart disease is the introduction by Fraenkel[153] of intravenous strophanthin medication. The great advantage of this lies in its rapid action, the effects being obtained in three to four minutes after the injection. The pulse becomes fuller and slower, the dyspnea diminishes and marked diuresis begins; gastro-intestinal disturbances are avoided. A single injection may restore compensation for a long time, although its direct action lasts not more than two to three days; repeated injections must be separated by a considerable interval to avoid cumulative action. The dose of strophanthin for intravenous injection is $\frac{1}{4}$ to 1 mgm. in sterile watery solution. It must be given intravenously and not subcutaneously, since, like all digitalis preparations, subcutaneous injection is extremely painful. To make sure that the needle is in a vein, Fraenkel recommends the use of a glass syringe and advises that a small amount of blood be drawn into the syringe to show that communication with the vein is free. Further articles by Fraenkel and Schwartz,[154] by Lust[155] and by Höpfner[156] have furnished confirmation of its efficiency.

It must be noted, however, that a certain number of sudden deaths have occurred within a few minutes after the injection was given. All of the authors above mentioned have had at least one such unfortunate occurrence; other cases have been reported by Von den Velden,[157] Freund[158] and Klieneberger.[159] While these may have been mere coincidences, as in cases reported by Höpfner where the death occurred before any of the strophanthin solution had been expelled from the syringe, yet it seems more probable that in other cases the strophanthin was directly to blame. As Von den Velden suggests, it is fair to suppose that in cases where digitalis may do harm the intravenous strophanthin, by its greater rapidity of action, may be still more harmful. Thus at present the intravenous use of strophanthin must be regard as a two-edged weapon, — a valuable agent when properly used in suitable cases, but one which should not be used without due care. It is probably contra-indicated wherever digitalis is contra-indicated, when the heart is already under the influence of digitalis, and where conditions do not demand energetic treatment. It is adequately shown, however, that when the action of digitalis is plainly and urgently needed, and when a slight risk is justified to obtain this at the earliest possible moment, the intravenous use of strophanthin is a great addition to our resources.

In conclusion a brief mention may be made of advances in the surgical treatment of heart disorders formerly considered purely medical. Actual results have been obtained from two procedures, the first that of cardiolysis or freeing of adherent pericardium, which has already been mentioned, and the second, that of thoracostomy, Thoracostomy consists of the resection of rib to relieve pressure upon a hypertrophied heart too large for its surroundings. A striking case of successful surgical treatment is reported by Morison[160] in a patient with aortic disease, great cardiac enlargement and severe attacks of angina which persisted in spite of any medical treatment that could be devised, in which, as a last resort, resection of ribs and cartilages of the front of the chest was performed. The relief of symptoms was prompt; a month and a half later the patient reported that he was able to go about with comparative comfort. Thus, in compression of the heart as well as in adherent pericardium, there is hope that surgical measures may prove of value.

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Book Reviews.

A Textbook on Uric Acid and Its Congeners, with Special Reference to Its Physical and Chemical Properties, Its Metabolism and Accumulation in the Organism, together with the Disease Processes arising thereform and Their Etiological Therapy. For Medical Students and Practitioners. By George Abner Gilbert, M.D., Physician to the Danbury Hospital. Danbury, Conn.: The Danbury Medical Printing Co. 1907.

In this volume of 310 pages, including a biological and general index, the author returns to the much-discussed question of uric acid and its relation to disease and to various physical and chemical conditions of the body. The author has done his work carefully and has covered the ground in very considerable detail. We are somewhat skeptical as to the establishment of the causal relationship between uric acid in the system and the various conditions of disease which are attributed to it. The problem, however, remains one worthy of the most painstaking study, and this volume is of value as a further contribution to a subject which has long been before the medical profession, particularly through the writings of Haig.

An Index of Treatment. By various authors. Edited by Robert Hutchison, M.D., F.R.C.P., Physician to the London Hospital, etc., and H. Stansfield Collier, F.R.C.S., Surgeon to St. Mary's Hospital, etc. Revised to conform with American usage by Warren Coleman, M.D., Professor of Clinical Medicine and Instructor in Therapeutics in Cornell University Medical College. New York: William Wood & Co. 1908.

This is undoubtedly a valuable book on a most important subject. Its authors, of whom there are approximately seventy, include the very best names in English medicine, and their statements of treatment in the great variety of conditions covered by the book are, therefore, of distinct value. The book is almost encyclopedic in character, the various affections being arranged in alphabetical order for ease of reference, and printed in small type. The statements of various forms of treatment are brief and not burdened with too great a variety of details, particularly where simple methods of treatment may be regarded as equally effective. In the articles devoted to surgery no attempt has been made to enter into the intricacies of technic. Non-operative treatment, however, has been discussed in detail, particularly those forms which the general practitioner is expected to use. An American edition of this book under the supervision of Dr. Warren Coleman differs from the English edition particularly in the adaptation of English prescriptions to the United States Pharmacopœia. Certain other matters in which the practice is distinctly different in America and England are likewise appended; as, for example, in the article on epilepsy, American institutions for the care of epileptics have been substituted for similar institutions in England. We have no hesitation whatever in cordially recommending this book as a succinct statement of good therapeutic procedures. It is naturally not absolutely complete, which could hardly be expected in view of the increasingly wide range of therapeutic measures, particularly of a physical sort.

Gonorrhea in Women. By Palmer Findley, M.D., Professor of Gynecology in the College of Medicine of the University of Nebraska, Omaha; Gynecologist to the Clarkson Memorial Hospital and Wise Memorial Hospital; Fellow of the American Gynecological Society. St. Louis, Mo.: C. V. Mosby Medical Book and Publishing Company. 1908.

This is a monograph of 112 pages including ten pages of bibliography and an index. The author says in the preface: " It is my hope that the book may serve in its way to instruct some, and to awaken all, to a greater realization of the supreme importance of the subject of gonorrhea in women." Also: " Nowhere in the English and American medical literature is the subject presented in its entirety."

Although we are pained by the inaccuracies in the references and the careless spelling of names, the book is to be recommended as a readable exposition of an important subject that cannot receive too much attention at the hands of the medical profession.

Outline of Physiology. By E. G. Jones, A.B., M.D., and R. G. Stephens, A.B., M.D. Second edition, revised. 383 pp. Philadelphia: P. Blakiston's Son & Co. 1908.

This small volume presents a concise summary of some recent textbooks of physiology. It does not aim to treat the subject exhaustively, but to give in brief space the main outline of physiological fact. It is more nearly of the character of the books used in high-school teaching than in medical courses. Since the material from which it is made has been obtained from textbooks already somewhat out of date, many of the chapters contain statements which are not in accord with the results of most recent research.

Applied Physiology. By Frederick A. Rhodes, M.D., Professor of Physiology and Embryology, Medical and Dental Departments of the Western University of Pennsylvania. 206 pp. Pittsburg: The Medical Press. 1907.

Concerning the aim of this volume there can be no controversy. The author endeavors to present to the student of medicine an explanation of the most important and frequent symptoms of disease. This is an object worthy of a thoroughly experienced physiologist and medical practitioner combined. The object is, furthermore, a highly desirable one to be attained, particularly since the conceptions of disease in medical practice have been largely dominated in the past by morphological pathology. If a thoroughgoing work on applied physiology could be placed in the hands of medical students, doubtless they would have a keener insight into the significance of symptoms than they now have.

In the present volume only a beginning is made in the direction of making the students acquainted with the disturbed physiology of disease. The author has taken up certain phases of circulation blood, respiration, digestion, secretion, regulation of temperature, excretion by the kidney and the nervous system. He has set down in tabular form the conditions under which certain symptoms arise and the physiological factors concerned in the production of the symptoms. It is unfortunate that much of the material is presented merely in outline, so that the student has a volume of the character of a quiz-compend to depend upon for information. It is unfortunate also that the material presented is based very largely on secondary sources and not on the original observations. The result is that the statements are in some cases not as precise as could be wished.

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FACTORS OF SUCCESS AND FAILURE IN VASCULAR SURGERY.

DR. ALEXIS CARREL, of the Rockefeller Institute, New York, is to speak before the Surgical Section of the Suffolk Massachusetts District Medical Society, on Jan. 6, on "Factors of Success and Failure in Vascular Surgery."

When the English surgeon Hallowell, in 1759, pinned the lips of the brachial arteries together and tied a string around the approximated edges, he unwittingly fulfilled the great essential in vascular suture, that is, he brought intima to intima without laceration in a clean wound, and the result was repair of the vessel wall without thrombus formation. Neither he nor the men that followed him appreciated this fundamental principle, and for over a century experimenters failed to obtain any uniform success in the suture of the blood vessels.

Jassinowsky, in his inaugural dissertation, published, in 1889, the results of his experiments in the suture of longitudinal wounds of vessels and proved conclusively that by observing certain technical details uniformly good results could be obtained in working on the large vessels. His technic, looked at from our present knowledge, was not perfect, but he opened the way in an apparently barren field. A considerable number of men have since worked at this problem, extending the field from repair of a longitudinal wound to that of complete cross-section. Of these the names of Payn and Floresco are to be mentioned with that of Carrel and his co-worker Guthrie.

To Alexis Carrel, however, belongs the credit of perfecting the technic so that almost consistently good results follow the vascular suture, be it of a longitudinal wound or an end-to-end anastomosis of an artery or vein or of an artery with a vein. By his efforts also more than by those of any others the scope of this work has been extended to the transplantation of organs. Successful implantation without disturbance of circulation of a segment of an artery which had been kept in cold storage for thirty-five days seems impossible, yet this is one of the many brilliant results which Dr. Carrel has attained. Perhaps even more suggestive is the transplantation of both kidneys *en bloc* from one animal to another with the re-establishment of the secretion of urine for a varying period, and the reimplantation of a kidney, followed later by the removal of the other kidney, with a permanent normal secretion of urine. Equally brilliant is his successful transplantation of a thigh of a dog.

These results are laboratory results. To what extent and how soon they will be developed and used generally in surgery is a question of the future. That the principles will be of great service, no one can doubt. In fact, already this work has made possible the transfusion of blood from one individual to another, a problem which had baffled the medical profession, though often attempted, until Crile, using Dr. Carrel's technic, was able in 1906 to report a series of remarkable results. Since that time the technical difficulties have been in great measure overcome by the use of a mechanical device and now we frequently see reports of cases saved by the transfusion of blood when all other known means have failed. Add to this the numerous successful operations on the blood vessels and it does not seem necessary to wait for future developments to pronounce this one of the great surgical advances of our generation.

We are indeed fortunate to have this opportunity of hearing Dr. Carrel.

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THE EMMANUEL MOVEMENT. A REJOINDER.

We publish in this issue of the JOURNAL a letter from the Rev. Louis C. Cornish, written in criticism of our editorial of Nov. 26, on "The Emmanuel Movement of Mental Healing." Mr. Cornish approaches the question in so temperate a spirit, and is so essentially in accord with our own views in his main thesis, that we are glad of an opportunity to correct, if possible, certain misconceptions which he appears still to entertain.

We agree with our critic at the outset that physicians at large have not been sufficiently concerned with the somewhat incoherent demand on the part of the laity for the treatment of their mental ills. Although we laid no special insistence on this point in our previous editorial, it was not ignored, as indicated by the following statement: "That the profession at large needs instruction in the practice of psychotherapy we willingly admit; we believe that such instruction should be given at medical schools to the end that the limitations as well as the possibilities of mental treatment be laid down, so far as our present knowledge permits." The time has surely come for a wide and generous recognition on the part of general practitioners of medicine of the therapeutic possibilities of mental treatment, based on exact methods. That this knowledge may become the common property of the physician is as possible as that he may have knowledge of other advances in medical treatment. We confidently look forward to this broadening of his horizon, this "vision of new heavens and new earths" as our correspondent puts it.

In the meantime we demand a fair judgment of the medical profession, and the part it has played in the development of the ideas which inadvisedly have recently been spread broadcast over the country. For many years a body of men within the ranks of the profession in this and foreign countries have been laboriously and conscientiously attempting to place the facts of mental treatment before the scientific world, and to the researches of these men must be attributed what accurate knowledge of the subject we now have. It must be remembered that this is a most complex field of study; that it involves problems of the highest medical and social significance; that it demands for its competent exposition a training in the exact methods of scientific investigation and that its rational development is best safeguarded by remaining in the hands of the medical profession. In this respect we make no fundamental distinction between this and other forms of medical treatment. It is natural and, we believe, salutary that a subject of this character should be slow of acceptance by the rank and file of the profession. Like other acquisitions of great import, it is desirable to make no false steps in its application, if the confidence of the public in the stability of the profession is to be maintained. We are sometimes too apt to forget that the essential claim which medicine as a profession makes on popular approval is its conservatism. It is beyond measure important that this matter of psychotherapy, little understood if not actively opposed by many thoughtful men in the profession itself, be not now further exploited by inadequately trained persons to the detriment of the cause, as has often before been the case. Those who feel most strongly the necessity of a wider recognition by physicians of the principles and practice of psychotherapy are entirely opposed to its popular and superficial exposition by those outside the profession. While we may regret the fact that the medical profession as yet has not completely aroused itself to its privileges and responsibilities, we entirely disagree with the statement that physicians are not "concerned with the need which the 'Emmanuel Movement' seeks to meet." As a matter of fact, the Emmanuel Movement could not have arisen had not a representative body of men in the profession intimately concerned itself for many years with this very need.

When, therefore, we say the profession is quite capable of handling the problem in the future as it has in the past, we modestly maintain that we are not making a statement "unworthy a scientific journal." Our faith in the profession as a progressive body of men is unbounded; it has brought much wisdom and study to bear on this particular problem in the past, as all who have investigated will agree, and we have no doubt it will remain the only safe guide for the future. To say "it is well known that the medical profession has done nothing in the past" is a failure to recognize that progress in special fields always comes from the few and not from the many.

Finally, we are criticised for seeing in the Emmanuel Movement few elements of permanence. We have previously expressed our fundamental objections to this mistaken effort, and we see no possible reason to retract our final statement. The establishment of a church "clinic," presided over by its pastor, is an anomaly which surely cannot be widely adopted if the Church is to retain its dignified historical position. The real possibilities of co-operation between the minister and the physician are thereby lost, to the disadvantage of both. As an expression of a popular need, the Emm nuel Movement has a certain significance: as an exposition of a means of meeting that need, it wholly lacks elements of permanence.

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THE MODERN CHRISTMAS SEASON.

When, so many centuries ago, on that first Christmas morning, the angels from heaven sang to the wondering shepherds on earth beneath that sweet and restful refrain of On Earth Peace, Good-will toward men, neither they nor the shepherds, if either angels or shepherds ever concern themselves with the future, could have realized what the present Christmas season would bring to a restless, anxious, palpitating world. Peace has fled, and though good-will still persists in hovering about, it generally in the end gets shoved into a corner and overmastered by peevishness and worry.

Must it be acknowledged that for a hustling age there can be only a hustling Christmas? Must a large part of the population go through in the shops the fierce struggles of the football field that friends may be remembered and good-will be paraded? Moreover, the early beginner does not seem to mitigate the lot of the later arrival. For him, too, sorrows are reserved when he has to go forth again to remember the forgotten ones or those who were not expected to remember him. And then the fatigue of mind and body which reaches its climax about the time for expressing joyful appreciation of all that has been received and all that has taken place!

Then there is the eating, in regard to which the injunction seems to be: Let those eat now who never ate before; let those who always ate, eat now the more! We fear the hospital records would show that the Christmas season is a season of tragedies; of fretfulness and indigestions we will say nothing.

At the risk of being called Scrooge, we enter this brief plea for a return of peace to the earth at the Christmastide and of a less hasty and fidgety good-will.

We think we shall have most doctors with us, including many psychotherapeutists; a considerable number of patients both old and young who have not yet recovered from their indiscretions or intemperance of various sorts; many shoptenders if not shopkeepers, and lastly a large part of most communities who though really with us will not dare say so.

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MEDICAL NOTES.

A Sanatorium for Tuberculosis. — The Executive Council of the Modern Woodmen of America has decided to conduct that society's sanatorium for the treatment of members afflicted with tuberculosis, located at Colorado Springs, free of charge to members. The sanatorium is situated on a tract of land containing 1,380 acres belonging to the society and will be opened Jan. 1, 1909, for the care of 60 patients. It is designed on the colony plan and it is expected will be increased materially in size later.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Dec. 29, 1908, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 80, scarlatina 61, typhoid fever 25, measles 42, smallpox 0, tuberculosis 46.

The death-rate of the reported deaths for the week ending Dec. 29, 1908, was 18.25.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Dec. 26, 1908, was 215, against 271 the corresponding week of last year, showing a decrease of 56 deaths and making the death-rate for the week 18.17. Of this number 120 were males and 95 were females; 205 were white and 10 colored; 131 were born in the United States, 81 in foreign countries and 3 unknown; 39 were of American parentage, 143 of foreign parentage and 33 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 77 cases and 1 death; scarlatina, 46 cases and 4 deaths; typhoid fever, 25 cases and 2 deaths; measles, 29 cases and 1 death; tuberculosis, 47 cases and 19 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 26, whooping cough 1, heart disease 28, bronchitis 12 and marasmus 1. There were 12 deaths from violent causes. The number of children who died under one year was 38; the number under five years 60. The number of persons who died over sixty years of age was 57. The deaths in public institutions were 72.

Deducting deaths of non-residents, the total is 194. The corrected death-rate is then 16.39.

Contribution of Massachusetts to San Francisco Earthquake Fund. — Subscriptions from Massachusetts for the relief of the California earthquake victims amounted to $923,945.54. The amount left unexpended, together with interest, up to April 1, 1908, leaves a balance in the treasury of $99,950.53. This latter amount, which was made up to $100,000, is to be spent in the establishment of a ward in the University Hospital in San Francisco, to be known as the Massachusetts Ward. The beds are to be free and preference given to those who suffered in the earthquake.

NEW YORK.

Building for Applied Sciences at University of Rochester. — The New York City Alumni of the University of Rochester celebrated with a dinner at the Hotel Astor, on Dec. 18, the raising of a fund of $100,000 which makes available a like sum promised on this condition by Andrew Carnegie with which to erect and equip at Rochester a building to be devoted to the applied sciences. Among the prominent physicians present were Drs. John P. Munn and L. Emmett Holt.

Percentage of Cures at State Hospital for Insane. — In his last annual report Dr. Britton D. Evans, medical director of the New Jeresy State Hospital for the Insane at Morris Plains, states that while in the last thirty-two years a little more than 24% of the patients were discharged cured, during the past year the percentage of cures has risen to 26.

Antivivisection. — Dr. Frank Van Fleet, chairman of the Committee on Legislation of the State Medical Society, has just published a statement calling attention to the fact that efforts will be renewed at the approaching session of the legislature to secure the enactment of laws seriously restricting animal experimentation as a means towards scientific medical progress. A pamphlet is now being circulated by the Society for the Prevention of Abuse in Animal Experimentation among physicians and others in various parts of the state which is a typical piece of antivivisection literature, abounding in misstatements and fallacious arguments, though it claims to present a " fair-minded and unbiased " view of the matter. Dr. Van Fleet urges the public not to accept such a misleading picture as is given in this pamphlet and states that the Medical Society of the State of New York is prepared to furnish literature expressing the truth regarding animal experimentation as well as to provide speakers for clubs and societies which are interested in this subject.

A School of Sanitary Science and Public Health. — President Butler, of Columbia University, has appointed a committee of 12 members of the University Faculty to report upon the feasibility of establishing in connection with Columbia a school of sanitary science and public health. Dr. Norman E. Ditman, of the Medical Department, is chairman of the committee. Among the other physicians are Drs. Samuel W. Lambert, M. Allen Starr and Philip H. Hiss, and Prof. Gary N. Calkins, of the Department of Zoology; William H. Burr, of the Department of Engineering, and Edward T. Devine, of the Department of Social Science, are also included in the committee. Among the subjects in which it is proposed to give instruction are the prevention of tuberculosis, milk inspection, dangerous occupations, water and ice supplies, public baths, tenement-house sanitation, street cleaning and river pollution, and if the report recommends the establishment of such a school it is probable that two courses of instruction will be offered in it. In the more extended of these the successful student will be entitled to receive the degree of Public Health Officer, and in the shorter one, a certificate that he has pursued a certain prescribed curriculum.

State Day at Tuberculosis Exhibition. — December 21 was New York State Day at the International Tuberculosis Exhibition. In the morning an informal conference was held by the committees on prevention of tuberculosis appointed in ten cities during the past year by the State Charities Aid Association and also by various organizations engaged in similar work in other cities of the state. In the afternoon the general topic was " Municipal and County Activities," and various mayors and other city and county officials participated in the meeting. In the evening a general public meeting was held. The Hon. Joseph H. Choate, who is now the President of the State Charities Aid Association, presided, and in the course of his remarks spoke of the far-reaching effects of the law passed by the last legislature requiring the registration of all cases of tuberculosis in the state and a general supervision of the patients by local health boards. Others who spoke were Bishop Richard Nelson, of Albany, chairman of the local committee on publicity; Hon. John Williams, Commissioner of Labor; Dr. H. M. Biggs, of New York; Dr. O. H. Rogers, of Yonkers, and Dr. John H. Pryor, of Buffalo. It may be of interest to know that 50,000 square feet of floor space and 110,000 square feet of wall space are required by the exhibits, which are displayed on three floors of the spacious new wing of the American Museum of Natural History.

Milk Committee's Work. — On Dec. 22 there was a meeting of the New York Milk Committee of the Association for Improving the Condition of the Poor at the residence of R. Fulton Cutting, the president, at which there were present the physicians who worked during the past summer in connection with the seven milk depots of the committee. At the conference the milk supply, the education of mothers and the prevention of infant mortality were discussed. Wilbur C.

Philips, the secretary of the committee, stated that in Manhattan alone there were 12,000 bottle-fed infants among the poor, and that to supply them with milk would require 55 depots. At the present time the committee was feeding 400 babies; Nathan Strauss, 2,000, and the Good Samaritan, 200; leaving 9,400 to be provided for. All these infants, he said, were frightfully handicapped by poverty, the ignorance of their mothers, hereditary weaknesses and social conditions. Last year 12,000 children under one year old died in Manhattan, and the close correspondence of this figure with the number of infants requiring supplies from milk depots was certainly striking. By enlarging the scope of this work so as to include 12,000 infants an excellent opportunity would be afforded to ascertain statistically at the end of a given period just what the effects of such work had been. To supply the 55 milk depots required, he believed, that a self-supporting milk company should be organized and that a general relief fund, to be dispensed discriminatingly, should also be established. He did not doubt that if the public were properly appealed to the amount necessary for this would be forthcoming.

Current Literature.

New York Medical Journal.
Dec. 12, 1908.

1. Pottenger, F. M. *The Application of Rest and Exercise in the Treatment of Tuberculosis.*
2. Gorton, J. T. *The Danger in Using Cow's Milk containing Tubercle Bacilli.*
3. Taylor, R. A. *Tuberculosis.*
4. Karpas, M. J. *Contribution to Our Knowledge of the Etiology of Dementia Precox.*
5. McGlinn, J. A. *Sarcoma of the Small Intestines with the Report of a Case.*
6. Dunn, J. F. *Malarial Fever.*
7. Bellantoni, R. *The Correct Treatment of Fracture of the Clavicle.*
8. Heitzman, C. W. *A New Operation for Hemorrhoids.*

The American Journal of the Medical Sciences.
November, 1908.

1. *Deaver, J. B. *Gallstone Disease.*
2. *McPhedran, A. *Ascites in Typhoid Fever.*
3. *Norris, G. W. *Lobar Pneumonia, a Study of 445 Cases with Special Reference to the Decreased Mortality since the Institution of the Fresh-Air Treatment.*
4. *Wood, H. C., Jr. *The Pharmacology of Heart Stimulants.*
5. *Schmoll, E. *Ataxia of the Heart Muscle.*
6. *Bachmann, G. *The Interpretation of the Venous Pulse.*
7. Freeman, R. G. *Fatigue in School Children as Tested by the Ergograph.*
8. *Elsberg, C. A., and Neuhof, H. *The Diognostic Value of Cutaneous Hyperalgesia (Head's Zones) in Abdominal Disease.*
9. Spiller, W. G. *Tumor of the Gasserian Ganglion: a Report of Two Cases with Necropsy.*
10. *Silver, D. *The Etiological Importance of Abnormal Foot Posture in Affections of the Knee.*
11. Goodman, E. H. *The Ricin Method of Jacoby-Solms for the Quantitative Estimation of Pepsin.*

1. Deaver describes the structure of the liver and its ducts from the embryologic point of view, showing how extensive is the area involved in the ramifications of its ducts, and how these ducts by their function of excretion are especially exposed to infection. This infection produces a catarrh which may lead to calculus formation, to phlegmonous or ulcerative processes, or to gangrene. Cholecystitis may be calculous or non-calculous. It may be catarrhal, purulent or gangrenous. From it the infection may spread to the ducts and liver, producing cholangitis, simple or purulent, or acute purulent hepatitis with multiple abscesses; the peritoneum may be infected from the gall bladder, with local or general peritonitis as a result. The occurrence of these conditions is illustrated by an analysis of 182 cases recently operated. Considerable attention is devoted to the importance of disease of the pancreas secondary to cholelithiasis. Operative technic is not discussed. Drainage is urged in all cases. The author believes cholecystectomy is to be avoided.

2. McPhedran reports six cases of ascites in typhoid fever, in all but one of which the fluid disappeared in convalescence. The case with persistent ascites may have been one of tuberculous peritonitis.

3. Norris has analyzed a series of 445 cases of lobar pneumonia treated at the Philadelphia General Hospital by the fresh-air method, and compares this series with that of Ashton and Sandis, comprising 991 cases from the same hospital before the fresh-air treatment was employed. The mortality in both series is high, 53% in the cases of Ashton and Sandis and 47% in that of Norris, to be attributed to the class of cases dealt with. The author's impression, however, is that the benefit of the fresh-air treatment is greater than these statistics would indicate, since many cases apparently hopeless showed marked improvement when transferred to the fresh-air ward.

4. Wood's article deals only with drugs of the digitalis group. The action of these he describes as (1) stimulation of the cardio-inhibitory mechanism, which prolongs diastole and slows the heart; (2) increase in the tonicity of the heart, leading to a more powerful systole; and (3) the constriction of blood vessels. The prolongation of diastole he regards as an important influence in enabling the heart to do its work with economy of energy. The constriction of vessels he considers not wholly undesirable, since it tends, by raising blood pressure, to maintain an adequate circulation in the coronary arteries. Strophanthus has been supposed to have less effect upon the arteries than digitalis, but Wood disputes this. The various glucosides isolated from digitalis are probably less efficient in increasing the contracting power of the heart than digitalis itself. Strophanthin is not mentioned.

5. Schmoll writes upon the subject of unequal contractions of different parts of the heart and hemisystole, basing his article upon a case in which the jugular pulse and the apical and esophageal cardiograms showed waves which seemed to indicate local contractions not transmitted to other portions of the heart.

6. Bachmann's article is an able description of the venous pulse and the origin of its individual waves, chiefly those found in physiologic tracings, with little reference to pathologic conditions.

8. Elsberg and Neuhof report studies of the zones of cutaneous hyperalgesia associated with visceral disease described by Head in 1893. They confirm Head's statements that in disease of abdominal viscera, such as stomach, kidneys and appendix, there may be in the skin of certain areas an increased sensibility to pain, and that each viscus has a corresponding cutaneous area or zone in which, when the viscus is diseased, cutaneous hyperalgesia may be found. Hyperalgesia in these zones, when present, they consider indicative of disease of the corresponding viscera and of considerable value in differential diagnosis. A number of cases are reported in which this sign was of service in determining the nature of the disease.

10. Silver calls attention to the influence of abnormal positions of the foot in throwing excessive strain upon the knee, which may not only give rise to pain in and around the joint, but, if unrelieved, may also produce actual joint changes. Furthermore, such abnormal foot posture may be a potent factor in keeping up disability of the knee-joint primarily due to other causes. Thus

in all cases of disorder of the knee-joint the position of the foot should be considered, and in any case faulty positions of the foot should be corrected. [F. W. P.]

The Lancet.

Nov. 28, 1908.

1. *Pavy, F. W. *Three Lectures on Pathology and Treatment of Diabetes Mellitus, viewed by the Light of Present-Day Knowledge.*
2. *Davies, D. S., and Hall, I. W. *The "Effective Periods" of Typhoid "Carriers."*
3. *Allen, R. W. *The Common Cold; Its Pathology and Treatment. With Especial Reference to Vaccine Therapy.*
4. Savill, A. F. *Case of Lichen Plano-Pilaris in which the Spinous Element Predominated.*
5. Thresh, J. C. *Sterilization of Potable Waters by Means of Calcium Hypochlorite.*

1. Pavy continues his lecture on diabetes, going at length into the various theories which have been brought forward to explain where the transformation of proteids and carbohydrates into sugar occurs. He discusses the rôle which the circulatory system and the lymphocytes play in this, and considers other somewhat complex chemical changes which take place.

2. Davies and Hall, in an interesting paper on the "effective periods" of typhoid "carriers," continue their report of a typhoid carrier which they had described in an earlier article. The months of January, February and March in this typhoid carrier, as well as in others, seem to be ineffective periods. During May and June typhoid bacilli were again found present in the intestinal contents, and the carrier again became a danger to the community. In following up such cases as this, he suggests a certain line of investigation. There must be systematic examination of the feces of convalescents or suspected carriers. These examinations must be made day by day and extend over long periods. Examination of the urine in their hands has given only negative results. The effectiveness of the carrier and the increase of mononuclear cells in the blood seem to correspond. This he believes may be a practical diagnostic point. Temperature and pulse records should be kept. It may be worth while to make bacteriologic examination of the nails and fingers. He does not consider that a typhoid carrier should be considered as cured until daily examinations of the intestinal contents have determined the absence of the bacilli during a period extending at least from April to November. In an appendix he gives some suggested instructions to typhoid convalescents to be handed to patients when discharged from the hospital. These suggestions are along the line of cleanliness, the handling of food, the use of disinfectants, and seem to be of practical value.

3. Allen, in a continued article on the "Common Cold, Its Pathology and Treatment," first gives a definition of his idea of a cold and then describes the bacteriologic researches which he has made. He studied the bacteria found in the trachea, throat and nose of normal healthy individuals and compares the results with what he found in patients suffering from colds. The results are somewhat confusing: in healthy throats a diphtheroid organism was found in 39%; in cases of colds these organisms were found in 38%. In an examination of 42 cases of colds investigated in London during the years 1905 to 1908, the bacillus of Friedländer was the prevailing organism in the vast majority of cases. This bacillus of Friedländer was tested in regard to its pathogenicity on various animals, of whom all except two died within twenty-four hours, and from whom the same organism was isolated. He describes some experiments in which a vaccine of this organism was prepared and injected in patients who had long been sufferers from colds and who were remarkably benefited by its use. Chronic tracheitis he believes is almost always caused by the micrococcus catarrhalis, while the bacillus of Friedländer is probably the only cause of a chronic nasal catarrh. He describes some work on the opsonic index in these various organisms, which goes to show that a high opsonic index is no protection against an acute attack. [J. B. H.]

British Medical Journal.

Nov. 21, 1908.

1. *Bennett, W. *Induced Hyperemia as a Means of Treatment, with Special Reference to Tuberculous Joint Disease and Stiffened Joints.*
2. Bradshaw, T. R. *Address on the Early Diagnosis of Organic Disease of the Nervous System.*
3. Drinkwater, H. *Address on Recent Theories and Experiments on Heredity and Inheritance.*
4. *Gowers, W. *Heredity in Diseases of the Nervous System.*
5. Doran, A. H. G., and Lockyer, C. *Two Cases of Uterine Fibroids showing Peritheliomatous Changes; Long Immunity from Recurrence after Operation.*
6. Stewart, J. *Solid Fibroid of Ovary obstructing Delivery.*
7. Henderson, T. B. *Note on Abdominal Hysterectomy for Cancer of the Cervix, and Its Immediate Mortality; with an Analysis of Seventeen Cases.*
8. Handson, L., Williams, H., and Klein, E. *Account of an Epidemic of Enteritis caused by the "Liverpool Virus" Rat Poison. Bacteriological Report.*
9. Pope, F. M. *Specific Skin Eruption in Pneumonia.*

1. Bennett describes the various methods of inducing hyperemia and the different conditions in which it is of value, and concludes that in Bier's method we have a means of inducing hyperemia which is more scientific and generally more efficacious than any other plan. Providing the patient is not the subject of arteriosclerosis, with necessary care and discretion the method may be used with safety and as a rule with advantage. He believes that this method should be used as an adjunct to and not as a substitute for the treatment hitherto adopted in the class of case for which it is used.

4. See *Lancet of* Nov. 21, 1908. [J. B. H.]

Nov. 28, 1908.

1. Moynihan, B. G. A. *Address on Inaugural Symptoms.*
2. *Smith, E. *Remarks on the Rheumatic Origin of Certain Serous Inflammations.*
3. *Hertz, A. F. *Abdominal Auscultation as an Aid in Diagnosis.*
4. Don, A. *Case of Bismuth Poisoning.*
5. Allen, R. W. *Observations with Lactic Acid Bacteria.*
6. Elgood, O. *Remarks on a Case of Tuberculous Peritonitis.*
7. Macewen, J. A. C. *A Case of Abdominal, Pelvic and Labial Tumor.*
8. Sheppard, W. S. *Three Cases of Trophic Lesions occurring Symmetrically on the Extremities.*
9. Saldanha, C. N. *Note on the Etiology of Beri Beri and the Presence of Arsin in Rice.*

2. Smith discusses the rheumatic origin of various serous inflammations. He does not see why inflammations of the pericardium are accepted without hesitation as of rheumatic origin, while in inflammations of other serous membranes this etiology is not accepted. He describes a case of what was apparently mild appendicitis in a child, which came on along with a soft cardiac murmur which had not been there previously. Salicylates were given and the abdominal symptoms immediately disappeared, the murmur remaining. He believes that the etiology of these two inflammations was the same and thinks that this occurs also in other cases.

3. Hertz has made a study of the various sounds heard on ausculting the abdomen in the region of the cecum. He describes experiments which he performed, and the work of others on this subject. He believes that in typhoid fever or in similar conditions where there are symptoms suggesting perforation, if on auscultation no sounds are heard in the region of the cecum, it is a very important diagnostic sign of a perforation. The presence of sounds in the abdomen in suspected cases of peritonitis, however, is of greater importance than their absence, as when the seat of origin of the sounds can be recognized it may be assumed that the peritonitis has not spread to that locality, or else inhibition of peristalsis would have occurred. [J. B. H.]

Deutsche Medizinische Wochenschrift. No. 42.

Nov. 19, 1908.

1. *Romberg, E. *Cardiac Dilatation.*
2. Schmidt, A., and Lohrisch, H. *Further Observations on the Importance of Cellulose (Hemicellulose) in the Nutrition of Diabetics.*
3. Pick, A. *A Peculiar Form of Disturbance of Orientation and its Occurrence in the Insane.*
4. *Fritsch, H. *The Justification for and Method of Interrupting Pregnancy.*
5. Zangemeister. *Non-operative Methods of Treatment in Cancer.*
6. Ledderhose, G. *Adaptation to the Results of Injuries as Evidence of Improvement.*
7. Walb. *The Treatment of Acute Middle Ear Catarrh.*
8. *Klimenko, W. N. *The Etiology of Whooping Cough.*
9. Brüning, H. *The Most Important Advance in the Domain of Pediatrics in Recent Years.*
10. Oelsner, L. *Practical Vessel for Complete Dehydration of Non-absolute Alcohol.*

1. Romberg mentions the different ways of diagnosing early heart dilatation by percussions and auscultation, and the difficulties that may arise to make such methods impractical. Then he mentions the value of the x-ray and the orthodiagraph, and the factors that make that method difficult at times. He lays special stress on the importance of the history and the signs of cardiac weakness which can be obtained by the pulse upon slight exertion. In some cases it is extremely difficult, if not impossible, to differentiate between early heart dilatation and some nervous affection.

4. Fritsch takes up the question of interrupting pregnancy in cases of tuberculosis of the mother and feels very strongly that such cases should have the pregnancy terminated. He advises strongly in favor of having the patient go to the hospital, and then goes with considerable detail into his method of producing the abortion. He does not favor dilatation of the cervix and curettage in these cases, but thinks it best to cause the death of the fetus by the introduction of antiseptics and then have it naturally expelled. If the mother does not expel the dead fetus, it is then a simpler matter to curette than before.

8. Klimenko presents some experimental proof to show that the organism described by Bordet and Gengon as the etiologic factor in whooping cough is probably the real cause. His experiments are with dogs, cats and apes, and in all of these he obtained partly positive results. In the apes and dogs he succeeded in producing whooping cough by injecting this organism into the trachea. In young cats he succeeded in causing death with this organism with the pathological anatomic picture similar to that produced in dogs infected with this organism.

Besides producing whooping cough, this organism may produce the pneumonia that often accompanies this disease. [C. F., Jr.]

Münchener Medizinische Wochenschrift. No. 47.

Nov. 24, 1908.

1. Friedrick, P. L. *Lung-Surgery.* (To be concluded.)
2. *Schmieden, V. *Theory and Practice of Difference of Pressure in Lung Surgery.*
3. John and Volhard. *Tuberculin Treatment in Practice.*
4. *Hering, H. E. *The Diagnosis of Cardiac Arrythmias without Tracings.*
5. Krönig. *Simplification of Aseptic Measures in Cases of Childbirth.*
6. Veit, J. *Dysmenorrhea.*
7. Klein, G. *Lumbar Anesthesia and Partial Narcosis.*
8. Walcher. *There exist No Anatomic Grounds for Decrease in the Ability of our Women to Suckle.*
9. *Weber, A. *The Demonstration of Typhoid Bacilli in Gastric Contents containing Bile.*
10. Wittmaack. *Operative Treatment of Purulent Meningitis in Suppuration of the Labyrinth.*
11. Morpurgo, B. *Parabiosis of Mammals of Different Sexes.* (Preliminary Communication.)
12. Kölliker, T. *Technic of Secondary Tendon-Suture.*
13. Straub, W. *The Pyrenal Question from Another Point of View.*
14. Heermann. *Infection of Physicians with Syphilis.*

2. The writer describes a new apparatus for the prevention of collapse of the lung during operations at which the thorax is opened. He claims for it many advantages over the cabinet of Sauerbruch and all other forms of apparatus.

4. Methods are given by Hering for the diagnosis without instruments of five of the more important types of arrythmia.

9. Weber examined typhoid carriers by giving them oil on an empty stomach and then washing it out as is done to obtain pancreatic juice. He says that bile is generally regurgitated into the stomach, that typhoid bacilli if present are found abundantly, and that they can be detected more often in this way then by stool cultures. [G. C. S.]

Deutsches Archiv für Klinische Medizin.

Bd. 93, Heft. 4, 1908.

1. *Nicolaier u. Dohrn. *The Effect of Chinolinic Acids and their Derivatives upon the Secretion of Uric Acid.*
2. *Oerum. *Quantatitive Observations on the Blood.*
3. Rautenberg. *Pathological Physiology of Human Skeletal Muscle and Certain Relations of it to the Function of Cardiac Muscle.*
4. *v. Hösslin. *Sodium Chloride Metabolism in Pneumonia.*
5. *Fischler. *Experimental Cirrhosis of the Liver.*

1. Nicolaier and Dohrn in some investigations on the physiological action of chinolinic acids and their derivatives in man and animals have found that some of these have the property of increasing very definitely the excretion of uric acid, and this result seems to be a very constant one without there being any injurious action on the animal organism. An increased excretion is produced even when the patients are on a purin-free diet, so apparently these drugs lead to an increased production of endogenous uric acid. These studies have all been carried out on normal individuals, but the authors think the investigations are of possible importance in the treatment of gout, though they have not had an opportunity of testing this.

2. For a considerable time there has been a growing feeling that the usual methods of studying the morphology of the blood do not always yield satisfactory data, and it is believed that there may be a quantitative change in the blood without there being a corresponding qualitative change in the morphology, and that there may be a symptomatic anemia, the result of decrease in the bulk of the blood, without their being any per cent decrease in the amount of hemoglobin. Oerum, by means of a method perfected by Haldane, has studied the total bulk of the blood in various conditions. The principle underlying this method of Haldane is that if a given amount of carbon monoxide is inhaled it is absorbed by the blood, and then if the amount of carbon monoxide present in the circulating blood is quantitated, the total bulk of the blood can be calculated from the ratio existing between the total amount of carbon monoxide inhaled and the per cent dilution of this in the general circulating blood. Applying this method to man and animals, Oerum finds that there are variations in the total bulk of the blood, and he has attempted a new classification of blood diseases based on these results. For instance, in chlorosis he finds that there is an increase in the total bulk of the blood with a decrease in the per cent of hemoglobin, and he explains a number of the symptoms of chlorosis and the good results of certain forms of treatment on the basis of this increased bulk of blood and its decrease brought about by the therapeutic means. He would classify anemias into anemias of physiological origin and anemias of toxic origin. Among anemias of physiological origin, he would include chlorosis with increased bulk of blood and anemia simplex, and post-hemorrhagic anemia with normal bulk of blood. Under anemias of toxic origin he would include pernicious anemia and the cachectic anemias, in both of which the blood bulk is a varying one. Under anemia he would include not solely diseases with a decreased per cent of hemoglobin, but all conditions of the blood in which there is any variation from the normal, so that there might be cases of anemia with increased, with decreased or with normal bulk of blood. This work gives a new viewpoint

to blood diseases and is very suggestive. Further investigation is necessary to determine how far these methods are applicable to clinical work and what practical results may follow.

4. v. Hösslin has carried out very careful studies of the sodium chloride and phosphate excretion in a group of cases of uncomplicated pneumonia. He finds a marked retention of sodium chloride in most cases of pneumonia. There is no such constant relation in regard to the phosphate excretion. The chief output of sodium chloride begins after the fall in temperature, and apparently the phosphate excretion begins earlier in most cases. v. Hösslin discusses various theories advanced to explain these observed facts. However, he arrives at no very definite conclusions as to the cause, but is inclined to assume that there is in pneumonia a relative renal insufficiency brought about by injurious action of the poison on the kidney.

5. Many investigators have attempted the experimental production of cirrhotic changes in the liver with very inconstant results. A toxic substance in certain animals may produce a connective tissue increase in the liver, but fail in the next animal of the same species, though all conditions are apparently identical in the two experiments. Not until the animal is autopsied can the result of the experiment be known. Fischler has sought to find some functional test that might indicate during life whether the liver parenchyma is being injured or not. For this he has selected the excretion of urobilin or urobilinogen in the bile. Under normal conditions these originate from bilirubin, are absorbed from the intestinal tract, circulated to the liver and there again excreted. If a biliary fistula is made and the bile prevented from reaching the intestine, the urobilin and urobilinogen disappear from the bile, but they reappear when injurious substances act on the liver cells. Their reappearance serves then to indicate that a toxic substance given to the animal is injuring the liver cells and this serves as a functional test of the liver. To dogs with biliary fistulæ Fischler gave amyl alcohol, ethyl alcohol and phosphorus, and tested the bile for urobilin and urobilinogen as an index of the effect of these substances on the liver cells. These experiments were continued over two and a half years on 20 dogs. Three groups of these dogs can be made: (1) dogs which showed no functional disturbance of the liver during life, and at death practically no changes in the connective tissue of the liver; (2) dogs which showed transitory or slight functional disturbance during life and at death degenerative changes in the liver cells and more or less proliferative change in the connective tissue, and (3) dogs which showed persistent functional disturbance during life and at death definite cirrhotic changes. Fischler believes that these experiments show that in a toxic cirrhosis the parenchymatous changes are primary and the interstitial, secondary, though closely related. This view has been advanced frequently, but usually is not so clearly supported by the evidence as is the case in these experiments. [H. A. C.]

Zeitschrift für Klinische Medizin.

Bd. 66. Heft. 5 and 6.

1. Goldscheider. *The Theory of Muscle Sense.*
2. *Bernstein, S., Bolaffio, C., and v. Westenrijk. *The Laws governing the Excretion of Sugar in Diabetes Mellitus.* (Ninth Communication.)
3. *Falta, W. *The Laws governing the Excretion of Sugar in Diabetes Mellitus. (Tenth Communication).*
4. *Reilingh, D. de V. *The Influence of the Frenkel Treatment on the Conductivity of the Peripheral Sensory Neurons in Tabes Dorsalis.*
5. Bence, J. *The Distribution of Nitrogen in Hypertrophied Cardiac Muscle.*
6. *Obrastzow, W. *Perisigmoiditis and Pelvic Forms of Appendicitis.*
7. v. Westenrijk, N. *The Relation of the Tone Method to Other Methods for Determining the Maximal and Minimal Blood Pressure.*
8. *Magnus-Levy, W. *European Chyluria.*
9. Brugsch, T. *The Neutrophilic Blood Picture in Infectious Diseases.* (Final reply to Arneth.)

2. This is a report of a very carefully studied case of severe diabetes which showed many interesting features. The case was more sensitive to proteins than to carbohydrates, and the addition of large amounts of fat to the diet caused the quotient $\frac{D}{N}$ to increase very far above what can be explained by the formation of sugar out of protein. The consumption of fat when fasting also increased the glycosuria and the quotient. On various forms of diet, the quotient over a long period was somewhat larger than can possibly be explained on the assumption that the sugar was all referable to that contained in the protein and carbohydrates of the diet, so that the assumption of the formation of sugar from fat seems necessary. Levulose was not better borne than dextrose, but did not appear as such in the urine; it must, therefore, have been converted to glycogen in the normal manner and then excreted in the form of dextrose. When the amount of protein in the diet was fairly large, there was enormous retention of nitrogen, which ceased immediately on reducing the nitrogen in the diet down to a certain level. This retained nitrogen, however, was not excreted afterwards when the retention was brought to an end by cutting down the protein.

3. Falta recapitulates the facts brought out in the preceding nine communications, and then draws up the following two laws for the excretion of sugar in diabetes: (1) The amount of sugar excreted in the urine is proportional to the sugar value of the diet, provided that the latter is kept within moderate limits. Other authors have held that this was not so, but they made the mistake of not reckoning in the sugar value of the proteins. If this is calculated as five times the nitrogen content, the excretion of sugar will be found proportional in many cases to the sugar value of the diet. (2) The relation between the sugar value of the diet and the excretion of sugar is disturbed if the sugar value is much increased or diminished over long periods. Falta considers that the much-disputed question as to the formation of sugar from fat must be answered in the affirmative, chiefly on account of the very large quotient $\frac{D}{N}$ obtained in some cases. He points out the important differences between the experimental pancreatic diabetes and genuine human diabetes, and concludes by setting forth a theory to explain the nature of diabetes in man. This theory is based largely upon his work with Eppinger and Rudinger on the correlation of the glands with internal secretion, and on the work on diabetes in man. This theory is as follows: Diabetes in man is a functional glycosuria of nervous origin and consists either in a *hypo*secretion of the pancreas affecting only the internal secretion or in a *hyper*secretion of the glands which govern the mobilization of carbohydrates, or in a combination of the two.

4. This article by Reilingh is a report of work done by the graphic method on the rapidity of conductivity of the sensory neurons in a case of tabes. It demonstrates that the condition of the peripheral neurons may be improved by practice after Frenkel's method. After long-continued practice of the sense of touch by means of stroking the sole, the reaction time, which had been very much increased over the normal, became greatly diminished. The reaction time for the pressure sense was also diminished, and that for the sense of movement of the limbs; the reaction times for the other qualities of perception which were not practised remained the same. From these experiments he concludes that the different sense qualities run in separate bundles in the peripheral nerves, and that in tabes dorsalis the disturbance of conductivity is in the peripheral centripetal neuron. He concluded that in his case the reflex arc in the cord was also affected.

6. Obrastzow describes the change of position made by the sigmoid flexure when it becomes dilated, and the position occupied by pus when it collects near the sigmoid. He believes that perisigmoid abscesses are due almost invariably to appendicitis, and ignores the possibility of an origin from sigmoid diverticula.

8. Magnus-Levy reports a case of European or non-parasitic chyluria, which presented the usual features of this disease, viz., a milky urine, containing fat, lymphocytes, cholesterin and lecithin, and large amounts of albumin and sometimes clots of fibrin. The urine was

chylous only during the night time, or when the patient assumed a recumbent position during the day. Examination with the cystoscope showed that the milky urine came from one kidney only. He obtained the urine from the two kidneys separately, and was able to calculate the amount of chyle present as approximately two parts to one of urine. He comes to the conclusion that all cases of chyluria, both tropical and European, are due to a communication between the thoracic duct and the urinary passages, through the lumbar lymphatics. The theory that chyluria is due to an excess of chyle in the blood is no longer tenable. [W. T.]

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Obituary.

CHARLES EDWARD BEEVOR, M.D.

Charles Edward Beevor, M.D., F.R.C.P. Lond., died suddenly Dec. 5, the day after attending the annual dinner of the Royal Society of Medicine. His death was wholly unexpected and will be the more deeply felt by his American colleagues from the fact that he attended and took part in the discussions of the last meeting of the American Neurological Association, and also gave the results of his researches on the circulation of the brain before various societies in this and other cities. Dr. Beevor was born in London in 1854 and received his medical education at the University College Hospital, graduating in 1881 from the University of London with the degree of M.D. He early directed his attention toward neurology and became resident medical officer at the National Hospital for the Paralyzed and Epileptic, and later became one of the physicians to this famous institution, an appointment he held at the time of his death. He was interested in post-graduate teaching at this hospital and has been one of those to make its enviable reputation. He was particularly associated in many of his researches with Sir Victor Horsley, and in 1907, as Croonian lecturer to the Royal College of Physicians, gave the results of his patient investigations on muscular movements and their representation in the central nervous system. These lectures were later published in book form. His work on the diagnosis and localization of cerebral tumors is also of much value, and those who had the privilege of hearing the results of his study on the distribution of the cerebral arteries will fully appreciate the scientific bent which was one of his characteristics.

We quote in part an appreciation of his colleague by Sir Victor Horsley, published in the *British Medical Journal.*

"A few years later, at the Brown Institution, we began a conjoint series of experimental researches which, though often arduous and exacting, leave numberless pleasant memories, due to the special charm of his manner and to the depth of his interest in neuro-physiology. This work brought out in the highest relief his unsurpassed accuracy of observation and his conscientious precision as a recorder. The facts he discovered throughout his long and industrious career will always, therefore, constitute an indestructible part of the fabric of neurology, however we may alter our point of view or interpretation of such complex phenomena. Indeed, his intense desire to discover the whole truth led him often to self-criticism, to distrust his own observations and delay his judgments and conclusions. This habit of scientific caution and reserve was in one sense a dis-service to him, for not a few of his valuable scientific and clinical thoughts must in consequence remain unpublished, although as a matter of fact his preliminary conclusions very rarely required revision."

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Correspondence.

THE EMMANUEL MOVEMENT. ITS ELEMENTS OF PERMANENCE.

Hingham, Mass., Dec. 22, 1908.

Mr. Editor: A physician has sent me your Journal of Nov. 26 last, containing a strong, concise editorial on "the Emmanuel Movement." Will you allow a country parson to touch on a point which your editorial ignores, namely, the demand that physicians themselves should be concerned with the need which "the Emmanuel Movement" seeks to meet?

First let me state my agreement with your conclusion that "it is not to be conceived that this great field of mental therapeutics is to be turned over to the churches, nor is it conceivable that representative medical men will indefinitely stand between the public and the minister to pass on patients which it is their manifest duty to treat themselves." This is the opinion of most of the ministers with whom I am acquainted. We have read along the lines of psychotherapeutics, concluding that here lies a difficult field of practice requiring medical training and skill, a great work for which we are unprepared. This proper humility before the skilled physician (may his tribe increase) perhaps justifies a little fling at your editorial.

Briefly, then, here is a need for mental treatment and a need that under the pressure of modern life increases. What is the medical profession doing to meet the need met in some measure by "the Emmanuel" and its kindred movements? I meet people living in the depths of discouragement. So does every minister. So does every thoughtful man who sees the lives of men beneath the conventionalities. Like Dante of old, these people find themselves "within a forest dark, for the straightforward pathway has been lost." And this attitude of mind becomes habitual. Its only cure is a broadening of the horizon, a shifting of interest from personal concerns to larger interests, the awakening of a larger personality that is locked within the prison of a brooding and melancholy mind; all this presupposing that there is no functional or other physical disorder. This facing about, this finding a way out of the woods, must be the end desired by all treatment. Churchmen have named it conversion, consecration, change of heart, and the like. Now we hear of re-awakening, of summoning power from a subliminal self that lives beneath the threshold of consciousness. A new vocabulary is fast supplanting the old. The name is of small consequence. The fact is of the utmost importance. If we grant that the aggregate mind is the normal mind, and for the limited purpose of this illustration it will probably be granted, we find in individuals states of consciousness that fall below the level of the normal, and states that rise above the normal. The normal consciousness itself lies between the two extremes, perhaps on the borderline between dread (that sinks below the normal) and exaltation (that rises above the normal). The desired end of any treatment for the depressed and melancholy mind must be to raise it at least as high as the normal consciousness of the aggregate mind. What does the average physician do toward this end? What method does he use?

Your editorial claims for the physician all the powers of healing that lie in mental treatments, with the possible exception of "the emotional element associated with prayer." All methods certainly are his. Prayer is his, if the method commend itself to his judgment. Whatever else prayer may be, it is a great rectifier of states of consciousness below the normal line. Whatever else it may bestow, it gives poise, self-command, a wholesomeness to the mind, and at the least tends to keep the states of mind as high as the normal consciousness. And further, it has demonstrated this abundantly. It has proved a most effective agent in the restoration of the mind to a normal level. Surely the clergy have no monopoly of prayer. This belongs to the physician, if he will have it; the question is not what belongs to the physician, but what does the physician use?

Your editorial continues, "This is essentially a medical problem, which the profession is quite capable of handling in the future as it has in the past." Surely this is unworthy your scientific journal! It is well known that the medical profession as a whole has done nothing in the past. Liébeault, Braid and others, whatever the mistakes of their pioneer work, deserved far better of their medical brethren than they received. You say, and rightly, "The matter is foreign to the ordinary clerical mind." This obviously is to be expected. The pity is that it is foreign also to the average medical mind, and with nothing like the same valid excuse. It is to be hoped that the profession can rise to greater heights than the modest boast of "handling the matter as it has in the past."

This will depend on whether the general practitioners incline to be interested in the mental states, the horizons, of their patients mentally needy. Are they concerned about this need? Are they interested in upbuilding broken personalities — upbuilding personality as well as upbuilding the body? (I abstain with difficulty from saying upbuilding the spirit!) Since there are not specialists enough to go round, and in all likelihood never will be, the burden of the answer must fall on the general practitioners.

It seems fairly clear that the general practitioner is not concerned with this problem. I have known many physicians, estimable gentlemen, and some exceptions which prove the rule. So far as inquiry showed, or observation indicated, the question never had even occurred to these men. Coming to a patient, troubled with what the Indians named "the long illness of much thinking," whose indigestion was an effect and not a cause of extreme depression, they cheerfully gave a pill for the stomach's sake and hurried off to make another ten-minute call next door. Many a patient, I speak from observation, is no more treated by his physician for the true cause of his malady, which is in the mind and not in the body, than was the proverbial man who died of appendicitis because the only physician available was a throat specialist and so performed tracheotomy.

There is a wide need of restoring to troubled people a poise and strength, mental and moral, which is being answered in many new ways, some of doubtful and perhaps of passing value, others clearly unwise. But whatever be the limitations of the Emmanuel Movement and its kindred methods, they succeed in opening to sufferers left unaided by their physicians visions of new heavens and new earths. Your editorial sees in the Emmanuel Movement few elements of permanence. Those of us who watch it from outside the medical profession see here a permanent element, likely to play a vital part in the future treatment of mental troubles. Not a few of us wish that the general practitioner would deliberately set himself about using at least the essential things in these movements that are proving themselves of worth. Until such time as the physicians do make use of the visions of new heavens and new earths, it seems probable that efforts more or less "bizarre" will both continue and increase.

Louis C. Cornish,
*Minister of the First Parish (Unitarian),
Hingham, Mass.*

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JUSTIN ALLEN, A.M., M.D. AN APPRECIATION.

West Falmouth, Mass., Dec. 19, 1908.

Mr. Editor: Justin Allen, A.M., M.D., died at Topsfield, Mass., and was buried there Nov. 8, 1908, from the Congregational Church. He was eighty-one years old. He graduated A.M. from Brown University and M.D. in 1856 from Harvard. Modest, quiet, studious, well-read, gentle, retiring, even-tempered, friendly and non-contentious, he enjoyed the esteem and respect of his classmates and clientage. He was one of those medical characters whose solid worth and equanimity shone in his profession. He was one of the most devoted attendants on medical meetings, his eyes shining with delight as he listened attentively. I can remember him as attending the first meeting of the Harvard Clinical Conference, Nov. 10, 1856; and the M.M.S. dinner speeches in June, 1908, received the same rapt attention. Good listener all the time. He rarely read a paper himself — too anthropophobic. I think he carried his modesty too far. For instance, at the late Harvard Medical School Building dedication he allowed himself to stand, listening through the whole exercises — a shame to the younger men who sat. He did not resent the shoving, pushing and scrambling of the young M.D.'s at the 1907 M.M.S. dinner in which we were riotously pushed about, separated and distressed. In 1908 words were spoken to the police beforehand and order prevailed.

I think he was a good doctor. The conventional idea is that a doctor is a fool who doctors himself, and yet from the age of seventy to eighty he had glycosuria and albuminuria and kept secret all the time. When he was eighty he allowed the writer to examine him and the copper precipitate filled the whole urine tested! Another curious thing, the specific gravity was almost normal. He went on a beef diet and the sugar disappeared in three weeks' time, and did not return, he said! Slight albumin held on till his death. If he may not have been a good doctor, he was the best diabetic patient I ever met, and he deserves the credit for it.

Such as he honor their profession, themselves and their classmates. He did not smoke, nor chew, nor swear, nor drink. God honored him with a long and useful life. We are thankful he lived as long as he did. He will be missed at the medical convocations he so long helped to make a success, for a good listener is as necessary to success as a good speaker. He was a virgin and consistent church member.

The following from the *Christian Intelligencer*, Dec. 16, 1908, is pertinent here.

> "True Worth.
>
> "One day a farmer and his son went into a field of wheat, which was just ready for the harvest.
>
> "'See, father,' said the boy, 'how straight these stems hold up their heads! They surely must be the best ones. Those that hang down their heads cannot be good for much.'
>
> "The farmer quietly picked a stalk of each kind, and said to his son, 'Look here! This stalk that stood up so straight is light-headed and almost good for nothing, while this that hung its head so modestly is full of the most beautiful grain.'"

Very truly yours,
Ephraim Cutter, M.D., H. M. S. 1856.

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INTERNATIONAL MEDICAL CONGRESS, BUDAPEST.

St. Louis, Mo., Dec. 24, 1908.

Mr. Editor: I beg to advise you that arrangements have been perfected for the American party to attend the International Medical Congress at Budapest next August. The arrangements for transportation are in the hands of Thomas Cook & Son, and this insures first-class accommodations and satisfaction in all details. Rooms have been reserved at the best hotels in Budapest, but it will be necessary for us to know approximately the number who will attend at an early date in order that the reservations may be augmented if necessary. A very low round-trip rate will be announced, including all expenses, and the writer would be pleased to answer any inquiries in regard to the trip to the Congress, and will send program and itinerary to any who are interested. All communications in regard to membership or scientific program should be addressed to Dr. J. H. Musser, chairman of the American committee, Philadelphia. Communications in regard to transportation and hotel accommodations should be addressed to Dr. Chas. Wood Fassett, St. Joseph, Mo.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, DEC. 19, 1908.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	—	—
Chicago	580	162	Waltham	4	1
Philadelphia	—	—	Pittsfield	6	0
St. Louis	—	—	Gloucester	7	1
Baltimore	174	39	Brookline	7	—
Cleveland	—	—	North Adams	6	1
Buffalo	—	—	Chicopee	9	4
Pittsburg	—	—	Northampton	6	2
Cincinnati	—	—	Medford	5	1
Milwaukee	—	—	Beverly	8	3
Washington	—	—	Leominster	3	—
Providence	—	—	Hyde Park	3	0
Boston	247	83	Melrose	6	0
Worcester	33	15	Newburyport	6	—
Fall River	40	12	Woburn	2	0
Cambridge	36	14	Westfield	4	2
Lowell	25	7	Marlboro	4	1
Lynn	24	6	Revere	3	—
New Bedford	18	5	Attleboro	2	1
Springfield	25	8	Peabody	—	—
Lawrence	26	8	Adams	2	—
Somerville	15	2	Clinton	1	0
Brockton	6	2	Gardner	4	2
Holyoke	18	6	Milford	1	0
Malden	14	2	Watertown	2	1
Chelsea	5	2	Plymouth	—	—
Newton	9	3	Weymouth	2	1
Salem	13	3	Framingham	1	1
Haverhill	12	3	Southbridge	4	1
Fitchburg	6	1	Wakefield	—	—
Everett	3	2	Webster	—	—
Taunton	12	3	Arlington	5	1

LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED AND OTHER OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED DEC. 16, 1908.

LAVINDER, C. H., passed assistant surgeon. Upon arrival of assistant surgeon Lasher Hart, relieved from duty at Stapleton, N. Y., and directed to report at the Hygienic Laboratory for temporary duty. Dec. 15, 1908.

RAMUS, CARL, passed assistant surgeon. Granted two days' leave of absence from Dec. 7, 1908, on account of sickness.

EARLE, B. H., passed assistant surgeon. Granted twelve days' leave of absence from Dec. 24, 1908.

BURKHALTER, J. T., passed assistant surgeon. Granted one month's leave of absence from Dec. 19, 1908.

FOSTER, A. D., passed assistant surgeon. Relieved from temporary duty at Angel Island, Cal., on or about Jan. 5, 1909, and directed to proceed via Manila, P. I., to Amoy, China, for duty in the office of the United States Consul. Dec. 14, 1908.

OLESEN, ROBERT, assistant surgeon. Relieved from temporary duty at San Francisco, Cal., on or about Jan. 5, 1909, and directed to report to the Chief Quarantine Officer of the Philippine Islands. Dec. 14, 1908.

HART, LASHER, assistant surgeon. Relieved from temporary duty at Hygienic Laboratory, and directed to rejoin station at Stapleton, N. Y. Dec. 15, 1908.

HUNT, REID, chief division of pharmacology, Hygienic Laboratory. Granted nine days' leave of absence from Dec. 11, 1908.

CLEAVES, F. H., acting assistant surgeon. Granted ten days' leave of absence from Dec. 19, 1908.

HUME, LEA, acting assistant surgeon. Granted ten days' leave of absence from Dec. 15, 1908.

PARKER, T. F., acting assistant surgeon. Granted five days' leave of absence from Dec. 27, 1908.

THOMPSON, JOHN K., pharmacist. Relieved from temporary duty at Angel Island, Cal., on or about Jan. 5, 1909, and directed to report to the Chief Quarantine Officer of the Philippine Islands. Dec. 14, 1908.

BOARD CONVENED.

Board of medical officers convened to meet at the Bureau on Jan. 11, 1909, for the examination of assistant surgeons for promotion to the grade of passed assistant surgeon, and for the examination of candidates for admission to the service as assistant surgeon. Detail for the board: Surgeon G. W. Stoner, chairman; Passed Assistant Surgeon Joseph Goldberger; and Passed Assistant Surgeon B. S. Warren, recorder.

CHANGES IN THE MEDICAL CORPS U. S. NAVY AND MARINE CORPS, FOR THE WEEK ENDING DEC. 26, 1908.

MAYERS, G. M., passed assistant surgeon. Detached from the Naval Recruiting Station, Baltimore, Md., and ordered to the Naval Medical School Hospital, Washington, D. C., for treatment and observation.

BROOKS, F. H., assistant surgeon. Detached from the "Franklin" and ordered to the Naval Recruiting Station, Baltimore, Md.

THOMPSON, F. W., acting assistant surgeon. Ordered to the Naval Hospital, New York, N. Y.

THE NEW YORK HERTER LECTURES.

DR. J. B. LEATHES, of the Lister Institute, London, will deliver six lectures on the subject, "The Metabolism of the Non-Nitrogenous Substances in the Animal Body" in the Carnegie Laboratory of the University and Bellevue Hospital Medical College, beginning Monday, Jan. 4, 1909, and continuing daily throughout the week, at 4 o'clock in the afternoon. Those interested are cordially invited to attend the course.

SOCIETY NOTICE.

BOSTON MEDICAL LIBRARY IN CONJUNCTION WITH THE SUFFOLK DISTRICT MEDICAL SOCIETY. — The surgical section meeting will be held in John Ware Hall, Wednesday, Jan. 6, 1909, at 8.15 P.M. "Factors of Success and Failure in Vascular Surgery," by Dr. Alexis Carrel, M.D., New York. Discussion by Drs. J. C. Warren, W. B. Cannon, J. C. Munro, F. B. Lund, J. C. Hubbard. "Demonstration of a Case of Aneurysm of the External Iliac Artery cured by Operation," by F. G. Balch, M.D. Light refreshments after the meeting.

FRED T. MURPHY, M.D.,	FRANKLIN G. BALCH, M.D.,
Secretary,	*Chairman*,
309 Marlborough St.	277 Clarendon St.

BOOKS AND PAMPHLETS RECEIVED.

Hints to Ships' Surgeons. By J. F. Elliott, L.R.C.S., L.R.C.P. Irel. London: John Bale, Sons & Danielsson, Ltd. 1908.

The Cure of Consumption with Subcutaneous Injections of Oil. By Thomas Bassett Keyes, M.D. Chicago.

The Meniere Symptom-Complex. By S. B. Goodhart, Ph.B., M.D. Reprint.

Transitory Disturbances of Consciousness in Epileptics. By S. B. Goodhart, M.D. Reprint.

The National Standard Dispensary. By Hobart Amory Hare, B.Sc., M.D., and others. Second edition, thoroughly revised and much enlarged. Illustrated. Philadelphia and New York: Lea & Febiger. 1909.

Sixth International Dermatological Congress, held at New York Academy of Medicine. Sept. 9 to 14, 1907. Vols. I and II. New York. 1908.

The Baby. A Book for Mothers and Nurses. By Daniel Rollins Brown, A.B., M.D. Boston: Whitcomb & Barrows. 1908.

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